BUCKEYE PARTNERS, L.P. – PORT READING TERMINAL
750 CLIFF ROAD, PORT READING, NJ 07064
DRAINAGE & CONTAINMENT IMPROVEMENTS
FOR THE 7945 TANK FIELD
WOODBRIDGE TOWNSHIP, MIDDLESEX COUNTY, NEW JERSEY

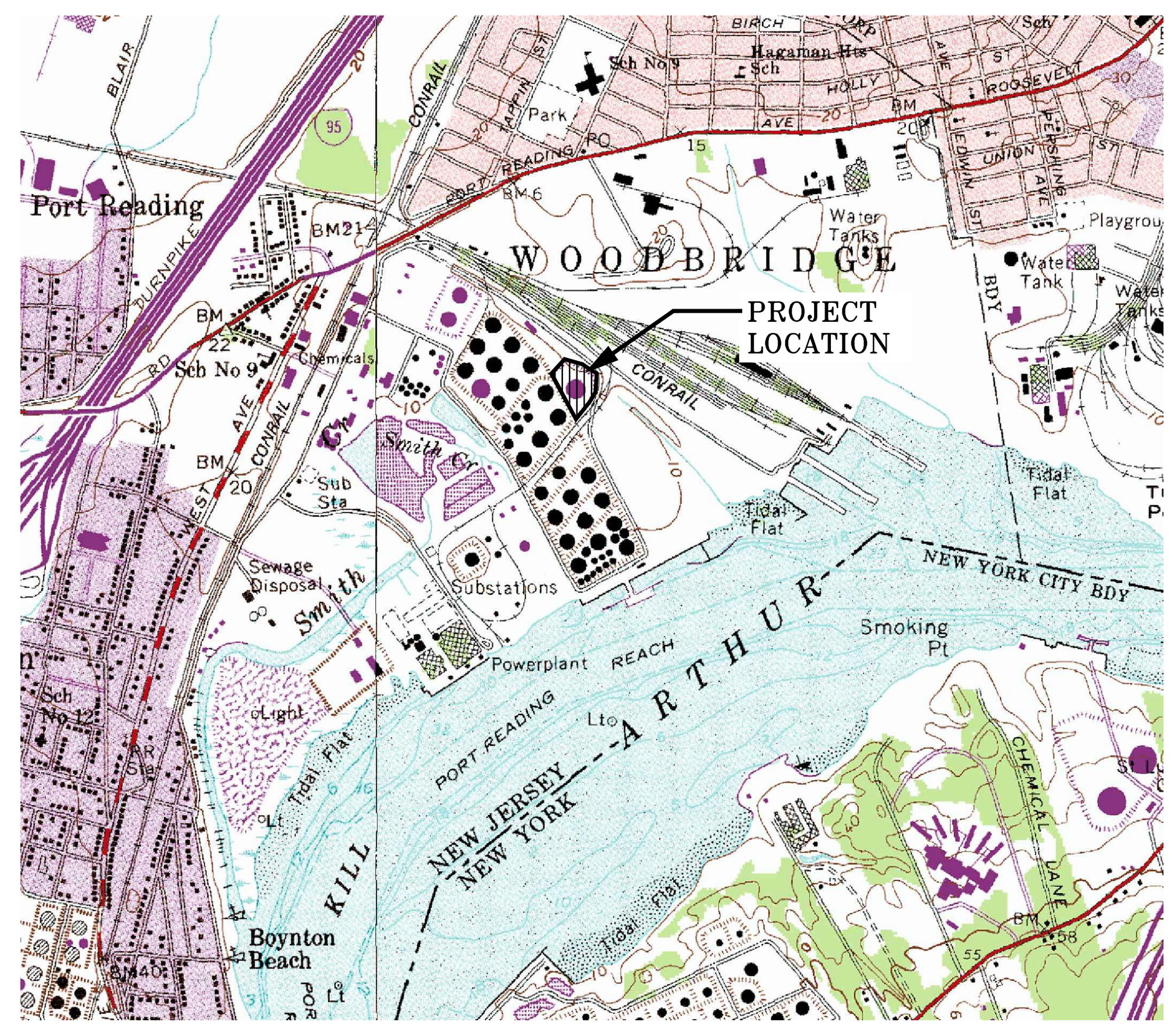
PROJECT DRAWINGS

ISSUED FOR REVIEW

N

LOCATION MAP

SCALE: 1"=2000'



REFERENCE: UNITED STATES DEPARTMENT OF INTERIOR GEOLOGICAL SURVEY
ARTHUR KILL, N.Y. – N.J. (1966, REV 1981)

LEGEND

EXISTING RAILROAD TRACKS
EXISTING BUILDING
EXISTING EDGE OF ROAD
EXISTING FENCE LINE
EXISTING STORM DRAIN
EXISTING CATCH BASIN
EDGE OF DRIVEWAY
EXISTING 1' MINOR CONTOUR
10 EXISTING 1' MAJOR CONTOUR
8.8 EXISTING SPOT ELEVATION
EXISTING 12" OF STONE AND SOIL COVER TO BE STRIPPED AND STOCKPILED / PROPOSED GEOSYNTHETIC CLAY LINER SECTION
PROPOSED INCREASED STONE SECTION FOR DRIVING AISLE
EXISTING ASPHALT TO BE REMOVED AND REPLACED
EXISTING PIPE RACK
PROPOSED SAWCUT LINE

EXISTING UTILITY POLE
EXISTING LIGHT POLE
PROPOSED STABILIZED CONSTRUCTION ENTRANCE
IP PROPOSED NLET PROTECTION
LD LD LD PROPOSED LIMIT OF DISTURBANCE
Ur WATER SOIL BOUNDARY

FOR REVIEW PURPOSES ONLY
NOT FOR CONSTRUCTION

Know what's below. Call before you dig. 811

BUCKEYE PARTNERS, L.P. ("BUCKEYE") IS NOT LIABLE FOR ANY EVENT(S) ARISING OUT OF THE USE OF THIS INFORMATION.
INFORMATION CONTAINED HEREIN IS "SECURITY SENSITIVE INFORMATION" AND SHOULD NOT BE REPRODUCED OR DISTRIBUTED IN ANY FORM WITHOUT WRITTEN PERMISSION BROM BUCKEYE. THE LOCATION OF BUCKEYE'S PIPELINES/FACILITIES ARE NOTED FOR GENERAL PURPOSES ONLY AND SHOULD NOT BE CONSIDERED SPECIFIC OR EXACT. THIS INFORMATION SHOULD NOT BE USED AS A SUBSTITUTE FOR CONTACTING THE APPROPRIATE ONE–CALL CENTER. BUCKEYE ENDORSES THE USE OF THE 811 NATIONAL ONE–CALL SYSTEM.

BID APPROVAL:

	NAME:	TITLE:	DATE:
PHA REVIEWED:			
FIELD:			
DESIGN ENGINEER:			
PROJECT MGR:			
TECH SERV. SME:			
TECH SERV. VP:			

CONSTRUCTION APPROVAL:

	NAME:	TITLE:	DATE:
PHA REVIEWED:			
FIELD:			
DESIGN ENGINEER:			
PROJECT MGR:			
TECH SERV. SME:			
TECH SERV. VP:			

PERMITTING APPROVAL:

	NAME:	TITLE:	DATE:
PHA REVIEWED:			
FIELD:			
DESIGN ENGINEER:			
PROJECT MGR:			
TECH SERV. SME:			
TECH SERV. VP:			

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX
Pittsburgh, PA Williamsport, PA

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STV PROJECT No.: 38–19085

NO	LOC	DESCRIPTION OF REVISION	BY DATE	APPR DATE
B		ISSUED FOR REVIEW	RRJ 03/06/20	SPG 03/06/20
A		ISSUED FOR REVIEW	RRJ 02/21/20	SPG 02/21/20

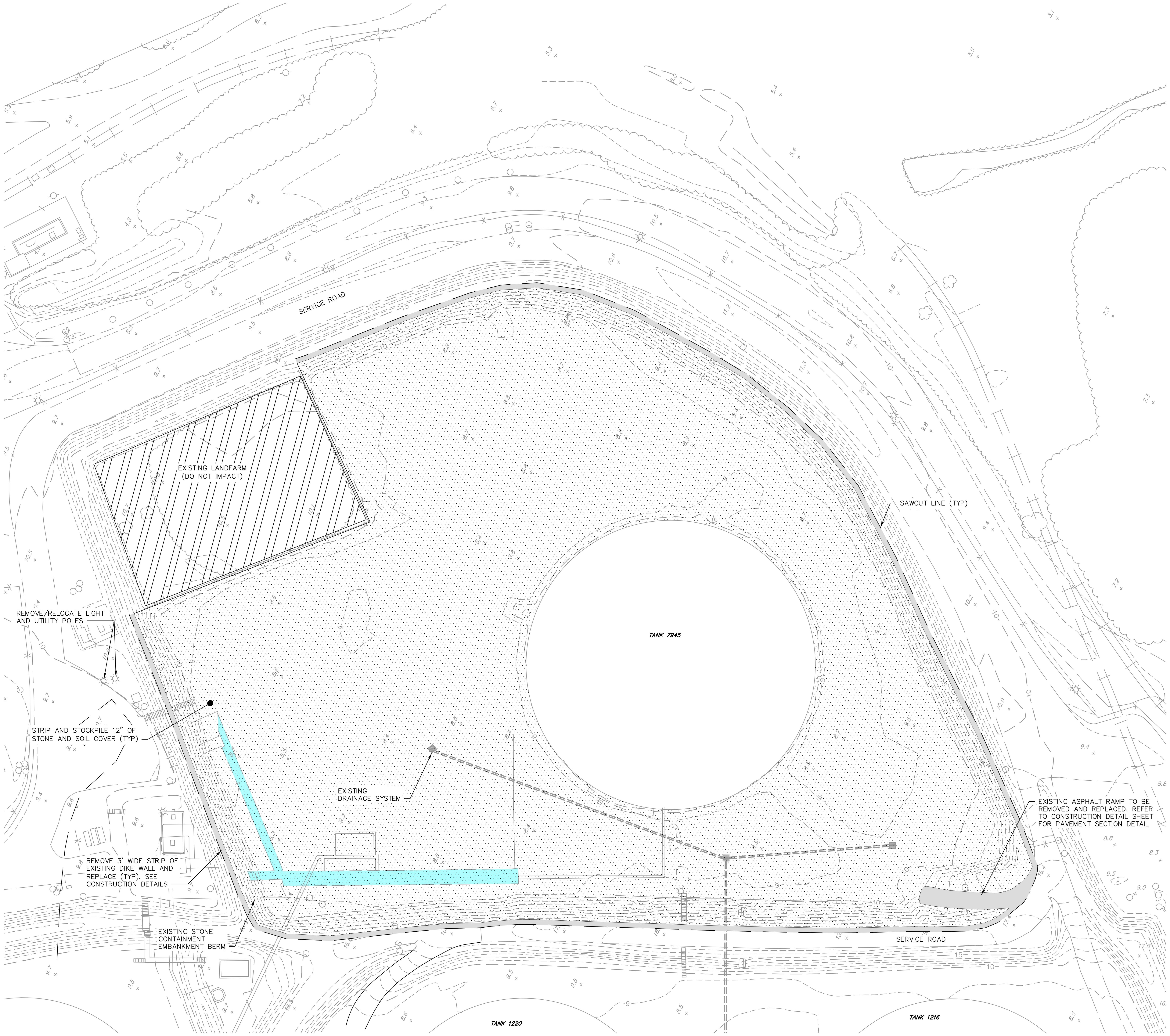
WORK ORDER NO. WORKORD

BUCKEYE PARTNERS, LP
PORT READING TERMINAL

DRAINAGE & CONTAINMENT IMPROVEMENTS
COVER PAGE
FOR THE 7945 TANK FIELD
PORT READING TERMINAL, PORT READING, NJ

DRAWN: RRJ	SCALE: NONE	DATE: 02/18/20	REV
APPROVED:	CHECKED: SPG	38–19085–Tank7945–C–001 DRAWING NUMBER	B

PAGE 1



PLAN
SCALE: 1"=30'

GENERAL NOTES

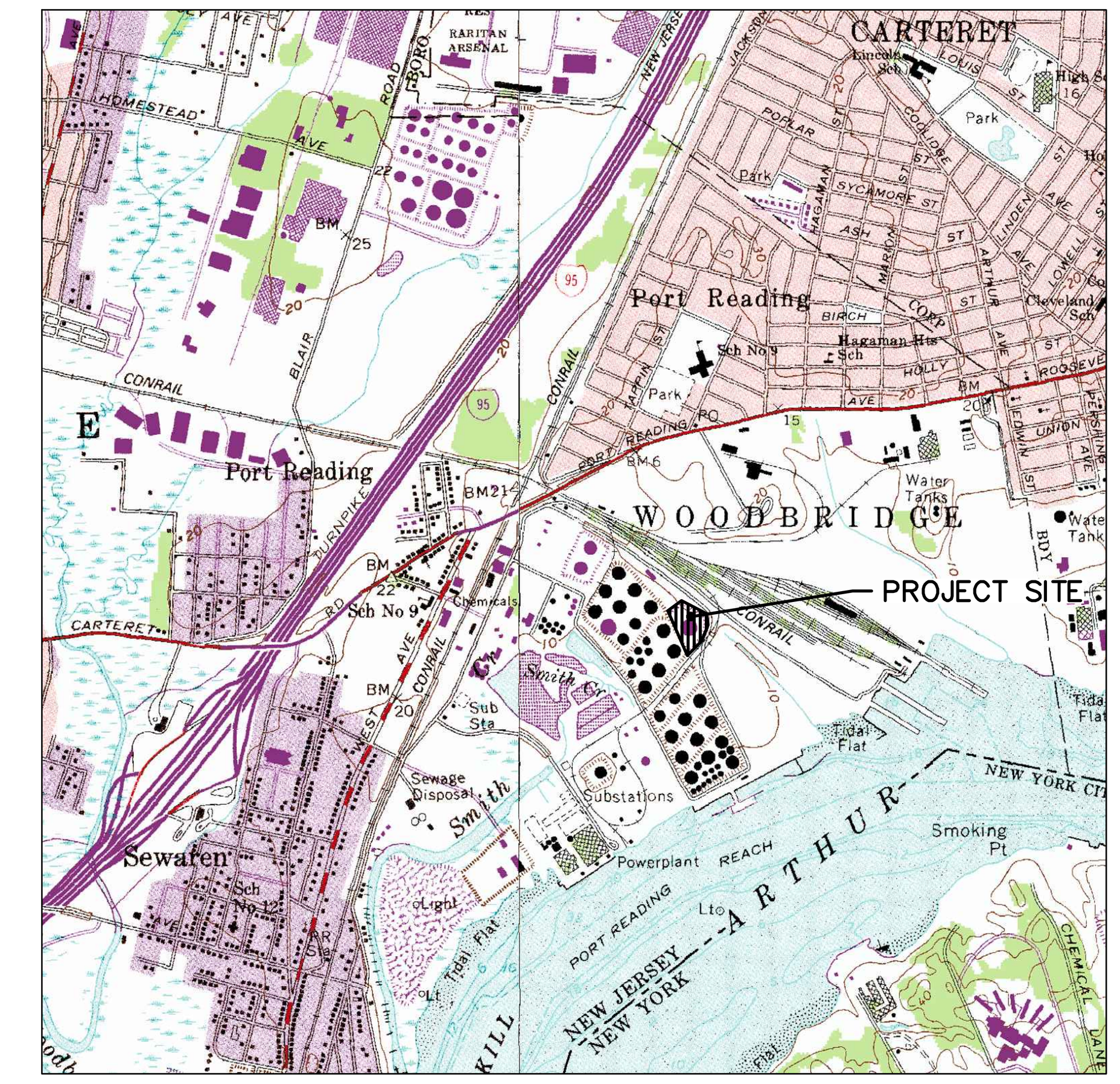
1. SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL DESIGNATE A TRAINED, RESPONSIBLE INDIVIDUAL FOR ALL SAFETY RELATED ITEMS. THIS PERSON SHALL HAVE THE AUTHORITY TO SUSPEND WORK SHOULD AN UNSAFE CONDITION BE ENCOUNTERED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING TEMPORARY OFFICE TRAILERS, DISPOSAL CONTAINERS AND ALL OTHER ITEMS AS MAY BE REQUIRED TO PERFORM HIS ACTIVITIES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL NECESSARY TOWNSHIP PERMITS AND LICENSES REQUIRED TO CARRY OUT HIS WORK IN FULL ACCORDANCE WITH REQUIREMENTS OF ALL REGULATIONS AND AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS AND ALL CODES, RULES AND REGULATIONS OF HEALTH, PUBLIC OR OTHER AUTHORITY CONTROLLING OR LIMITING THE METHODS, MATERIAL TO BE USED, OR THE ACTIONS OF THOSE EMPLOYED IN WORK OF THIS KIND. ALL WORK, LABOR OR MATERIAL NECESSARY TO COMPLY WITH THESE LAWS, CODES, RULES AND REGULATIONS SHALL BE PERFORMED AND FURNISHED BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY EQUIPMENT AND METHODS TO KEEP EXCAVATIONS FREE OF WATER AND PROTECT WORK AND ADJACENT STRUCTURES FROM DAMAGE BY WATER DURING ALL STAGES OF HIS ACTIVITIES. NO SEPARATE PAYMENT WILL BE MADE FOR DEWATERING OPERATIONS AND ALL COSTS THEREOF SHALL BE INCLUDED IN THE PRICE BID FOR THIS PROJECT.
5. THE CONTRACTOR SHALL FURNISH, PLACE AND MAINTAIN SHEETING, BRACING, SHORING AND OTHER SUPPORTS REQUIRED BY HIS WORK AND TO PROTECT ADJACENT STRUCTURES. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND ALL COSTS THEREOF SHALL BE INCLUDED IN THE PRICE BID FOR THIS PROJECT.
6. THE CONTRACTOR IS ADVISED THAT THE SITE THAT HAS MULTIPLE OPERATIONS IN PROGRESS. AT NO TIME MAY THE TRAFFIC PATTERN BE BLOCKED BY THE CONTRACTOR'S ACTIVITIES. CONTRACTOR ACTIVITIES MUST BE COORDINATED WITH THE ENGINEER AND BUCKEYE STAFF.
7. THE CONTRACTOR MUST PROTECT THEIR WORK AT ALL TIMES. NO COMPENSATION WILL BE PROVIDED BY BUCKEYE PARTNERS L.P. DUE TO DAMAGE BY WEATHER OR OTHER OPERATIONS.

UTILITY NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES PRIOR TO DEMOLITION OR CONSTRUCTION ACTIVITIES TO DETERMINE THE EXACT LOCATIONS AS NECESSARY AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. UTILITY LOCATIONS SHOWN ON THESE PLANS ARE FROM ABOVE-GROUND OBSERVATIONS AND FROM RECORD INFORMATION. IN ADDITION, THE LOCATION AND TYPE OF THE EXISTING UTILITIES SHOWN ON THESE PLANS IS NOT GUARANTEED TO BE ACCURATE NOR ALL INCLUSIVE. THE CONTRACTOR SHALL USE THE EXISTING UTILITY LOCATIONS SHOWN AS AN AID IN DETERMINING EXACT LOCATIONS. THE CONTRACTOR MUST CONTACT THE "ONE CALL SYSTEM" AT 811 OR 1-800-272-1000 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION, DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
2. IF ANY UTILITY FACILITIES, INCLUDING DISTRIBUTION MAINS OR SERVICES ARE DISRUPTED OR DAMAGED DURING THE CONSTRUCTION WORK ASSOCIATED WITH THIS PROJECT, THEN THE CONTRACTOR IS RESPONSIBLE FOR RESTORING THE UTILITY FACILITIES BY THE END OF THE WORKING DAY AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL EXISTING FACILITIES PRIOR TO ANY EXCAVATION AND/OR CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXCAVATION OF TESTPITS IN ORDER TO DETERMINE EXACT HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES WHERE THERE MAY BE POSSIBLE CONFLICTS WITH THE PROPOSED IMPROVEMENTS. IN THE EVENT THAT THE EXISTING UTILITIES CONFLICT WITH THE PROPOSED IMPROVEMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE TO LOOP, EXTEND AND/OR RELOCATE THE EXISTING UTILITY AS NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF THE EXISTING SURFACE, INCLUDING, BUT NOT LIMITED TO, PAVING, TOPSOILING, FERTILIZING, SODDING AND SEEDING. IN ADDITION, THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL NECESSARY PERMITS THAT MAY BE REQUIRED BY THIS WORK.
4. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A UTILITY LOCATION COMPANY TO TRACE OUT EXISTING UTILITIES IN THE VICINITY OF THE WORK PRIOR TO PERFORMING ANY SITE WORK INVOLVING EXCAVATION. THIS COST SHALL BE INCLUDED IN THEIR BID.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION, INSTALLATION AND SUPPLY OF ANY UTILITY SERVICE REQUIRED FOR THIS PROJECT, INCLUDING TEMPORARY POWER AND TELEPHONE SERVICES. ALL COST FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THIS PROJECT.
6. THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL ITEMS IN CONFLICT WITH THE CONSTRUCTION AS DIRECTED BY BUCKEYE PARTNERS, L.P.

DEMOLITION NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DEMOLITION AND REMOVAL OF ALL EXISTING STRUCTURES, FOUNDATIONS, FENCES, ABOVE AND BELOW GRADE UTILITIES, ROADWAYS, MISCELLANEOUS DEBRIS AND ALL OTHER MATERIALS AND ITEMS LOCATED WITHIN THE DEMOLITION LIMITS OR IN CONFLICT WITH THE PROPOSED CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRIPPING THE PROPERTY TO REMOVE THE FIRST 12" OF STONE AND SOIL COVER AND PAVED AREAS WHERE INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL REMOVE ALL BURIED DEBRIS, INCLUDING BUT NOT LIMITED TO, FOUNDATIONS, BRICK, WOOD, CONCRETE, METAL AND ASPHALT FRAGMENTS FROM THE SITE.
3. ALL EXISTING UTILITIES, ABOVE GROUND PIPING, TANKS, ELECTRICAL BOXES, CONCRETE SLABS, AND OTHER ANCILLARY EQUIPMENT ARE TO REMAIN UNLESS INDICATED TO BE REMOVED. DAMAGE TO ANY EXISTING ITEMS WITHIN AND ADJACENT TO THE TANKFIELD THAT ARE TO REMAIN SHALL BE REPLACED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL DEBRIS GENERATED DURING HIS DEMOLITION AND CONSTRUCTION ACTIVITIES. ALL EXCESS DEBRIS MUST BE REMOVED TO A NJDEP APPROVED LANDFILL. NO ON-SITE BURIAL OF DEBRIS WILL BE ALLOWED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AS-BUILT DRAWINGS OF THE PROJECT SITE, INCLUDING UTILITY INFORMATION FOR REVIEW AND APPROVAL BY THE ENGINEER AND BUCKEYE STAFF.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ABATEMENT, REMOVAL AND DISPOSAL OF ALL HAZARDOUS MATERIALS IN ACCORDANCE WITH NJDEP AND ANY OTHER AUTHORITY HAVING JURISDICTION.
7. ALL EXISTING SITE IMPROVEMENTS SHOWN ARE TO REMAIN UNLESS INDICATED OTHERWISE.



LOCATION MAP
NO SCALE

NOTES:

1. SEE COVER SHEET FOR LEGEND.
2. UTILITY LOCATIONS AND ELEVATIONS ARE ESTIMATED UNLESS SPECIFIC TEST HOLE LOCATIONS ARE CALLED OUT. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. THESE DOCUMENTS ARE BASED UPON THE FOLLOWING INFORMATION:

   TOPOGRAPHIC INFORMATION SHOWN IS BASED ON AERIAL PHOTOGRAPHY DATED JULY 22, 2015 AND SUPPLEMENTED WITH FACILITY BASE PLANS PROVIDED BY BUCKEYE PIPELINE CO. LIMITED TOPOGRAPHIC SURVEY PERFORMED BY STV IN DECEMBER 2017 TO CONFIRM SEWER LOCATIONS FOR THE 3RD TANK FIELD, DECEMBER 2018 TO CONFIRM INFORMATION FOR THE 7945 TANK FIELD, AND FEBRUARY 2020 TO CONFIRM STORM LOCATIONS FOR THE 7945 TANK FIELD.

   HORIZONTAL DATUM IS NEW JERSEY STATE PLANE NAD 1983. VERTICAL DATUM IS NAVD 1988.

LEGEND:

- EXISTING 12" OF STONE AND SOIL COVER TO BE STRIPPED AND STOCKPILED
- EXISTING ASPHALT TO BE REMOVED AND REPLACED
- EXISTING PIPE RACK
- PROPOSED SAWCUT LINE

FOR REVIEW PURPOSES ONLY
NOT FOR CONSTRUCTION

GRAPHIC SCALE
1"=30' — 30' 0 30' 60'

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX Pittsburgh, PA Williamsport, PA

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STV PROJECT No.: 38-19085

PAGE 2

NO	LOC	DESCRIPTION OF REVISION	BY DATE	APPR DATE
B		ISSUED FOR REVIEW	RRJ 03/06/20	SPG 03/06/20
A		ISSUED FOR REVIEW	RRJ 02/21/20	SPG 02/21/20

WORK ORDER NO.

BUCKEYE PIPE LINE CO.
PORT READING TERMINAL

DRAINAGE & CONTAINMENT IMPROVEMENTS
EXISTING CONDITIONS/DEMOLITION PLAN
FOR THE 7945 TANK FIELD
PORT READING TERMINAL, PORT READING, NJ

DRAWN: RRJ	SCALE: 1"=30'	DATE: 02-18-2020	
APPROVED:	CHECKED:	38-19085-Tank7945-C-101 DRAWING NUMBER	REV B

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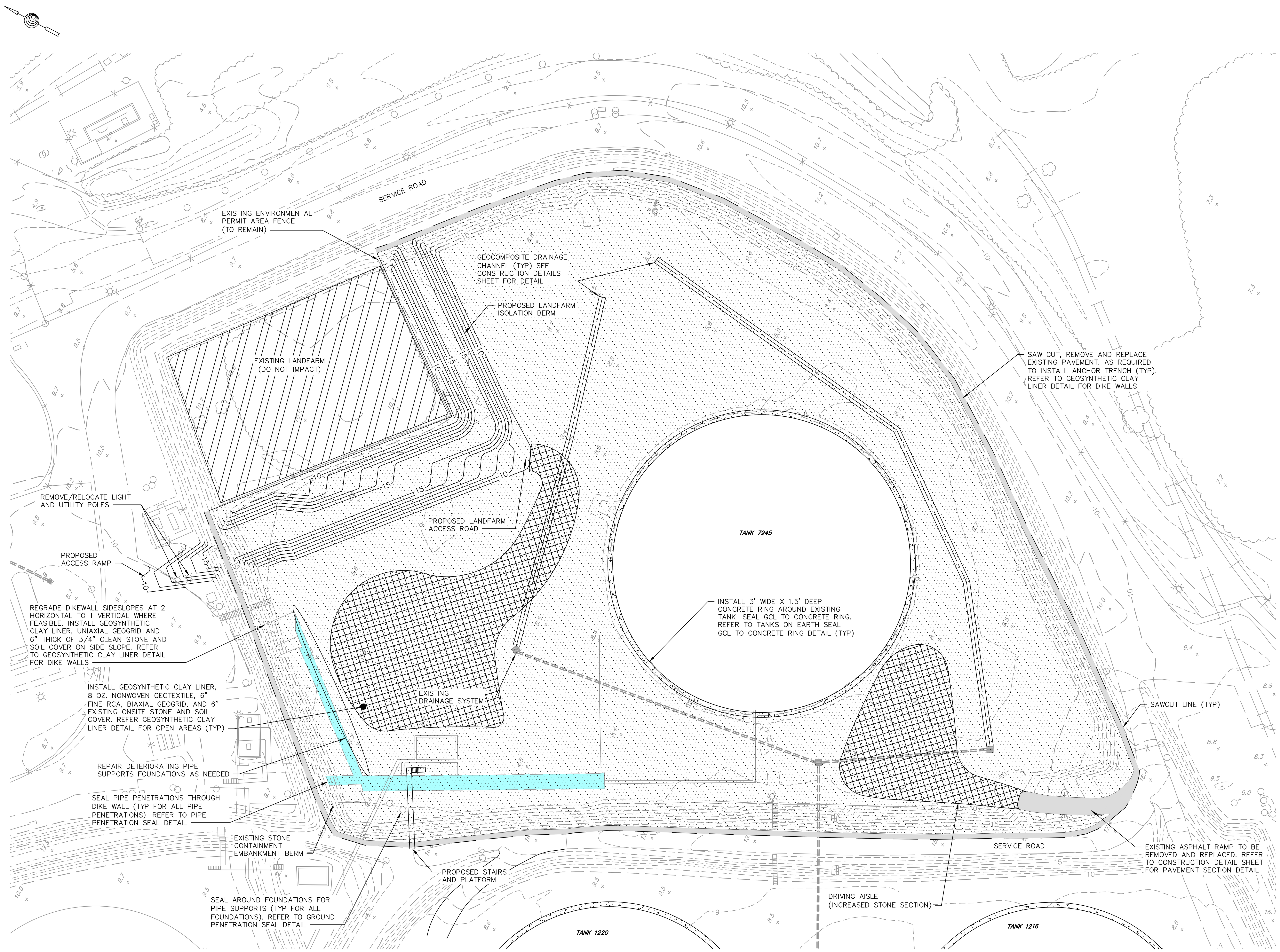

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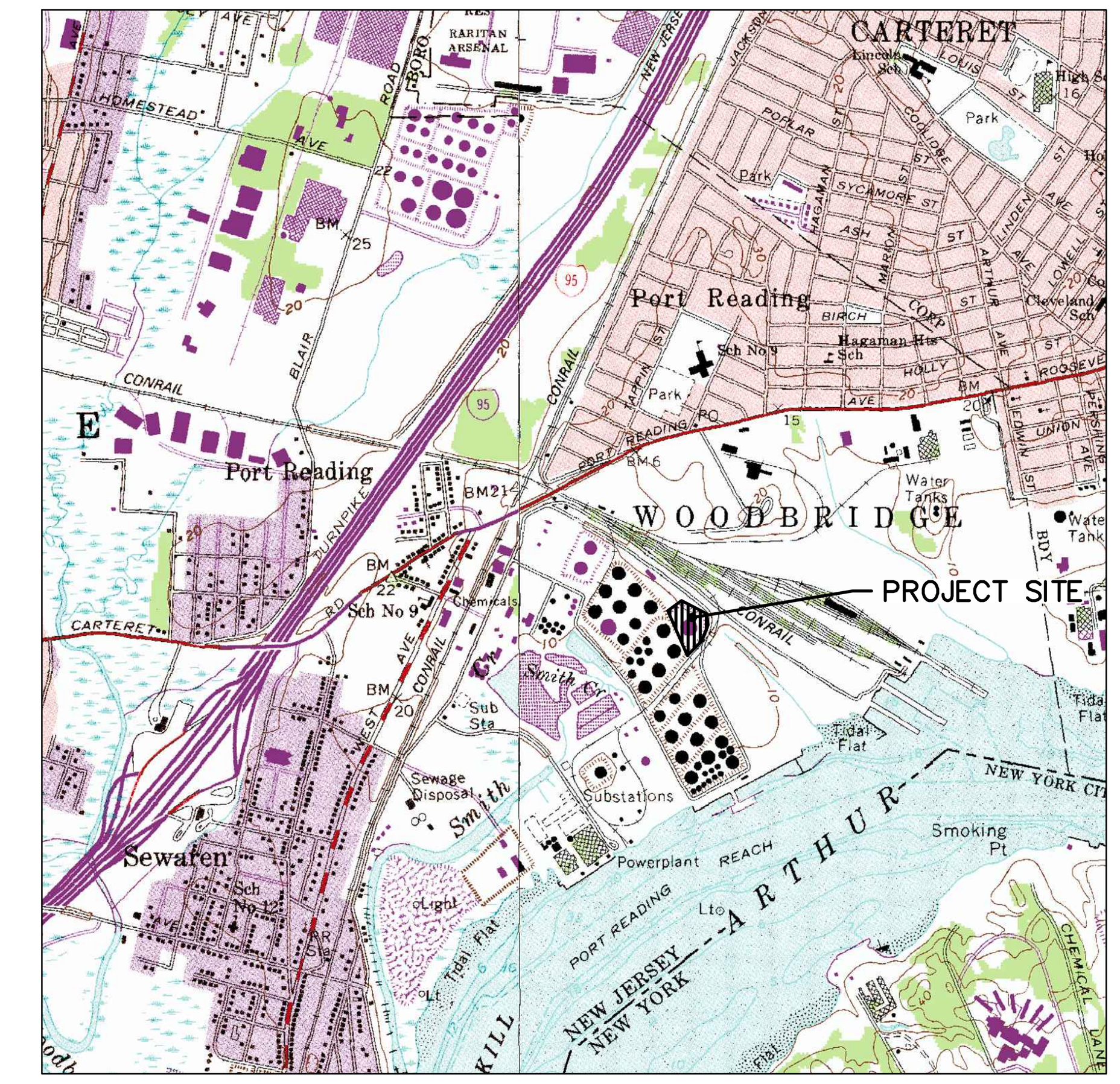

LOCATION MAP
NO SCALE

NOTES:

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   HORIZONTAL DATUM IS NEW JERSEY STATE PLANE NAD 1983. VERTICAL DATUM IS NAVD 1988.

LEGEND:

- PROPOSED GEOSYNTHETIC CLAY LINER SECTION
- EXISTING ASPHALT TO BE REMOVED AND REPLACED
- EXISTING PIPE RACK
- PROPOSED INCREASED STONE SECTION FOR DRIVING AISLE
- PROPOSED SAWCUT LINE
- PROPOSED CONCRETE APRON AROUND EXISTING TANK

FOR REVIEW PURPOSES ONLY
NOT FOR CONSTRUCTION

GRAPHIC SCALE
1"=30'
30' 0 30' 60'

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX
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STV PROJECT No.: 38–19085

PAGE 3

NO	LOC	DESCRIPTION OF REVISION	BY DATE	APPR DATE
B		ISSUED FOR REVIEW	RRJ 03/06/20	SPG 03/06/20
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WORK ORDER NO.

BUCKEYE PIPE LINE CO.
PORT READING TERMINAL

DRAINAGE & CONTAINMENT IMPROVEMENTS
LINER DELINEATION PLAN
FOR THE 7945 TANK FIELD
PORT READING TERMINAL, PORT READING, NJ

DRAWN: RRJ	SCALE: 1"=30'	DATE: 02–18–2020	
APPROVED:	CHECKED:	38–19085–Tank7945–C–102 DRAWING NUMBER	REV B

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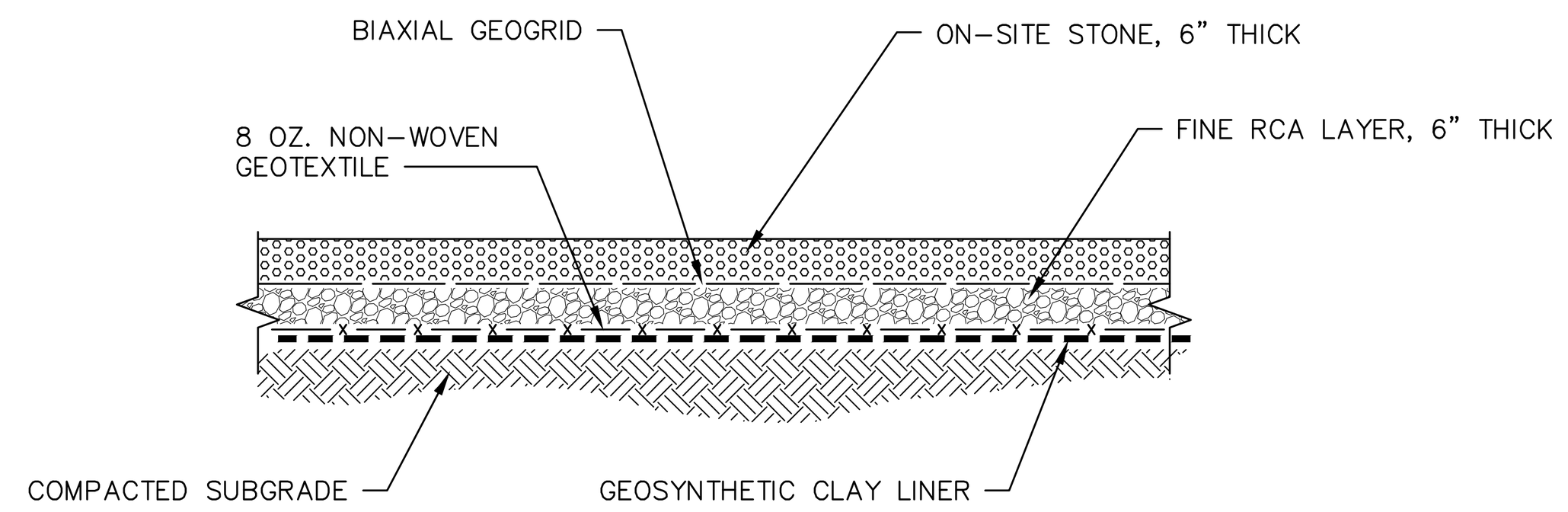
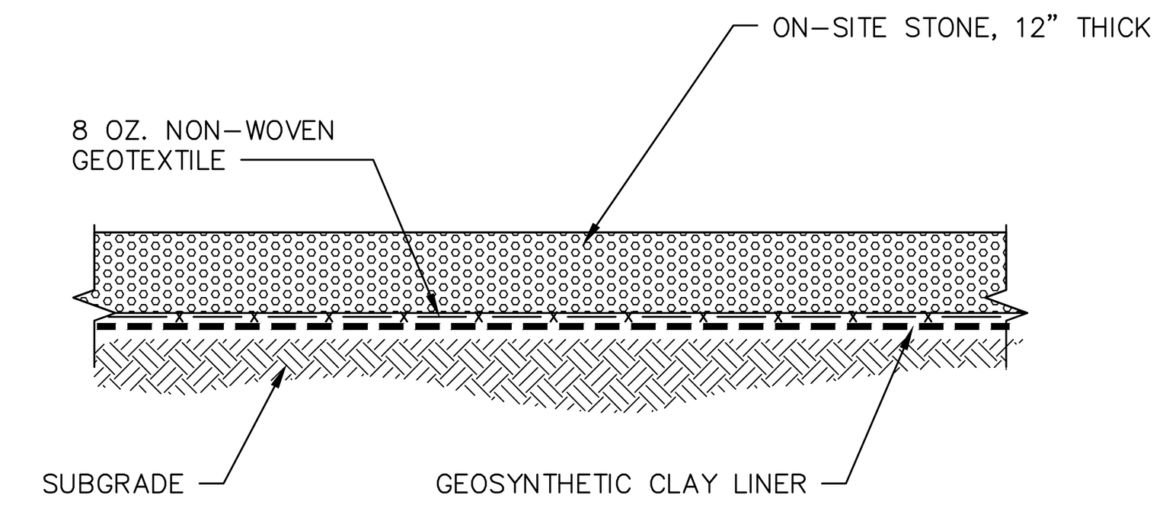
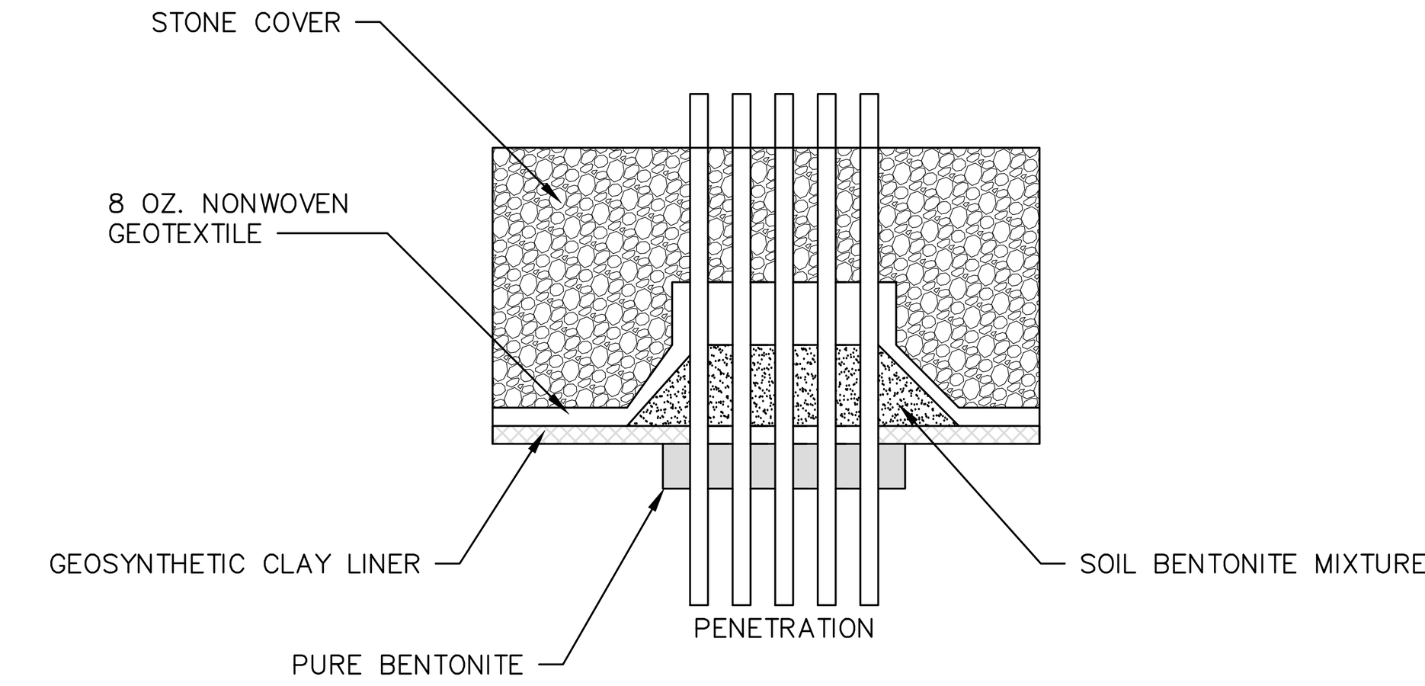


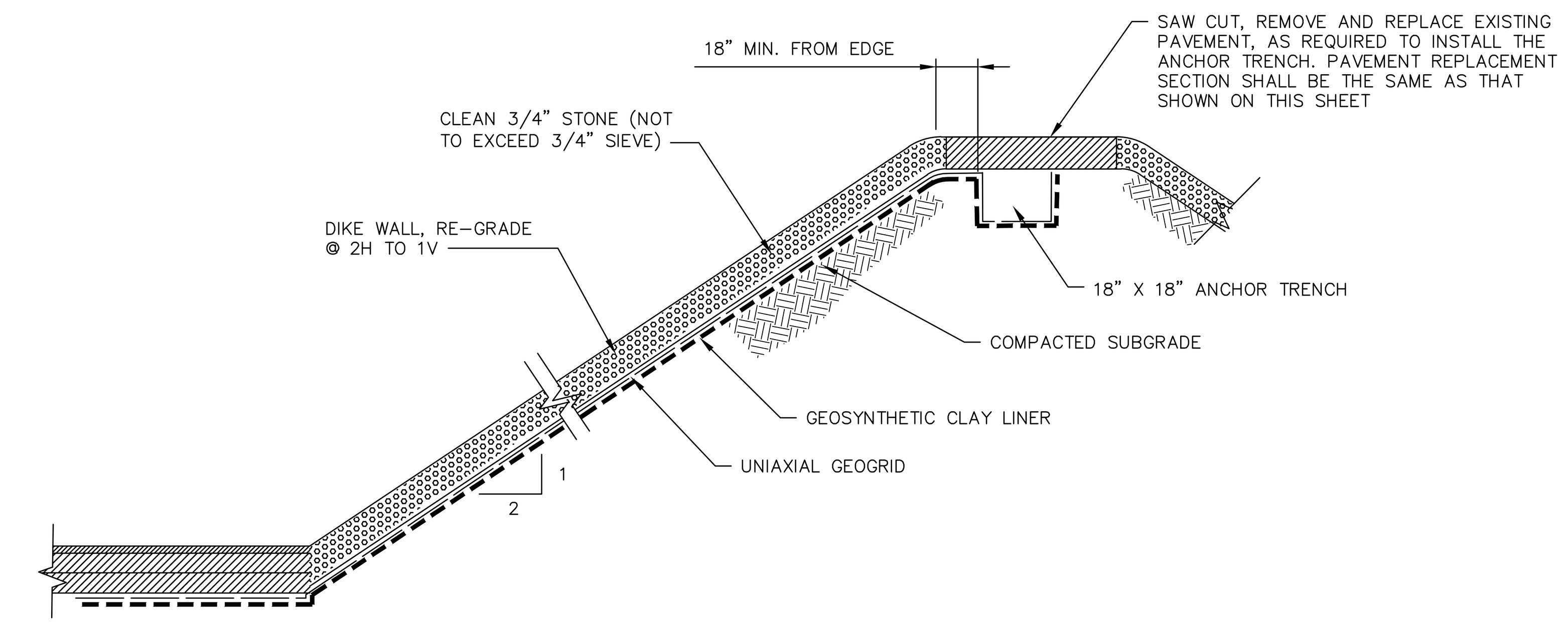
GEOSYNTHETIC CLAY LINER DETAIL
OPEN AREAS
NO SCALE



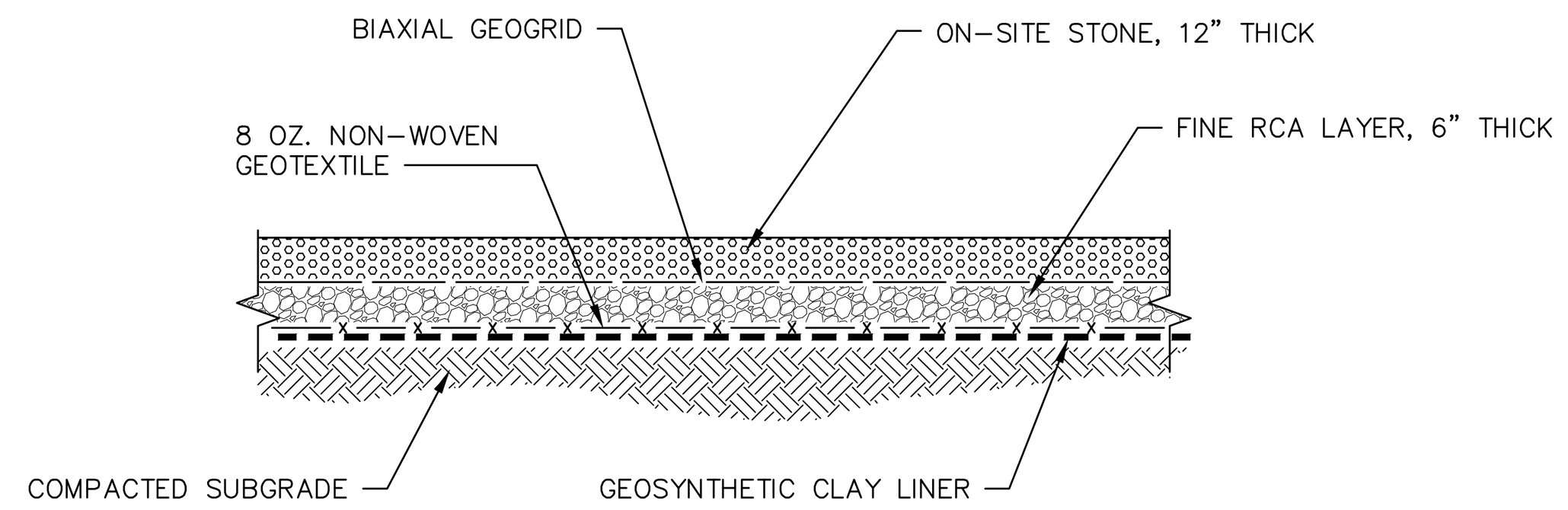
GEOSYNTHETIC CLAY LINER DETAIL
UNDER PIPE RACK AREAS
NO SCALE



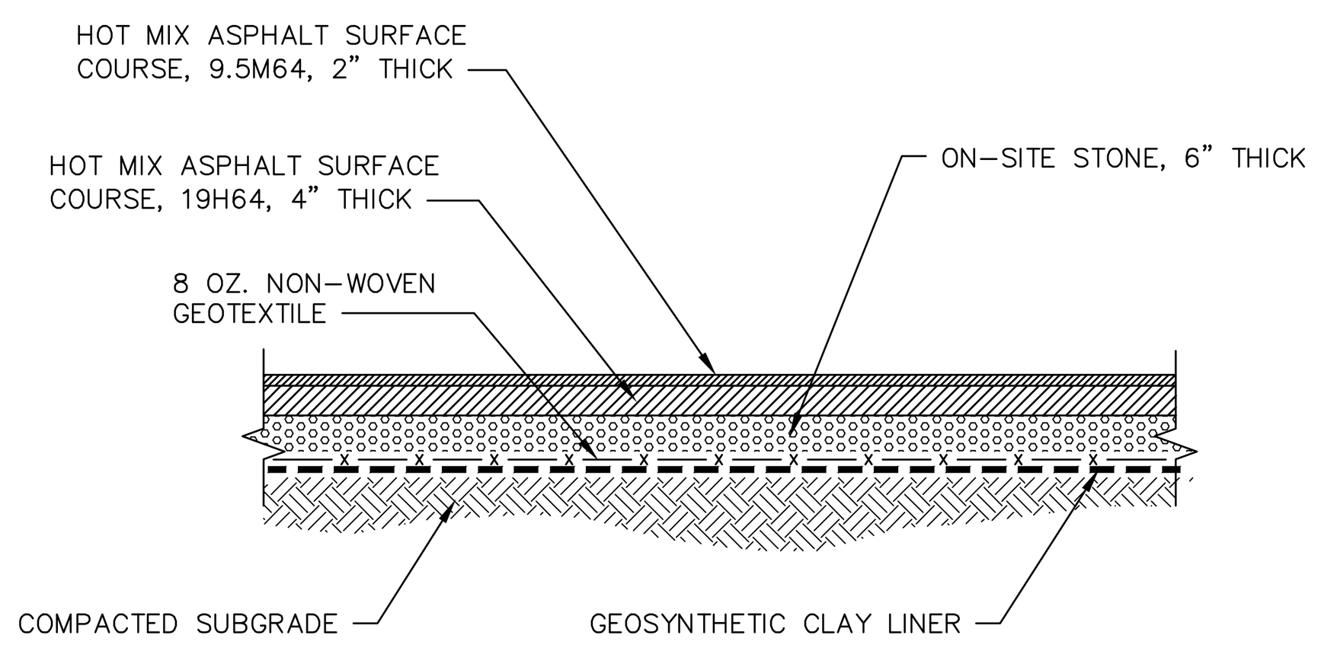
GROUNDING WIRE/SMALL PENETRATION SEAL DETAIL
NO SCALE



GEOSYNTHETIC CLAY LINER DETAIL
DIKE WALLS
NO SCALE



GEOSYNTHETIC CLAY LINER DETAIL
DRIVING AISLE AREA
NO SCALE



PAVEMENT SECTION DETAIL
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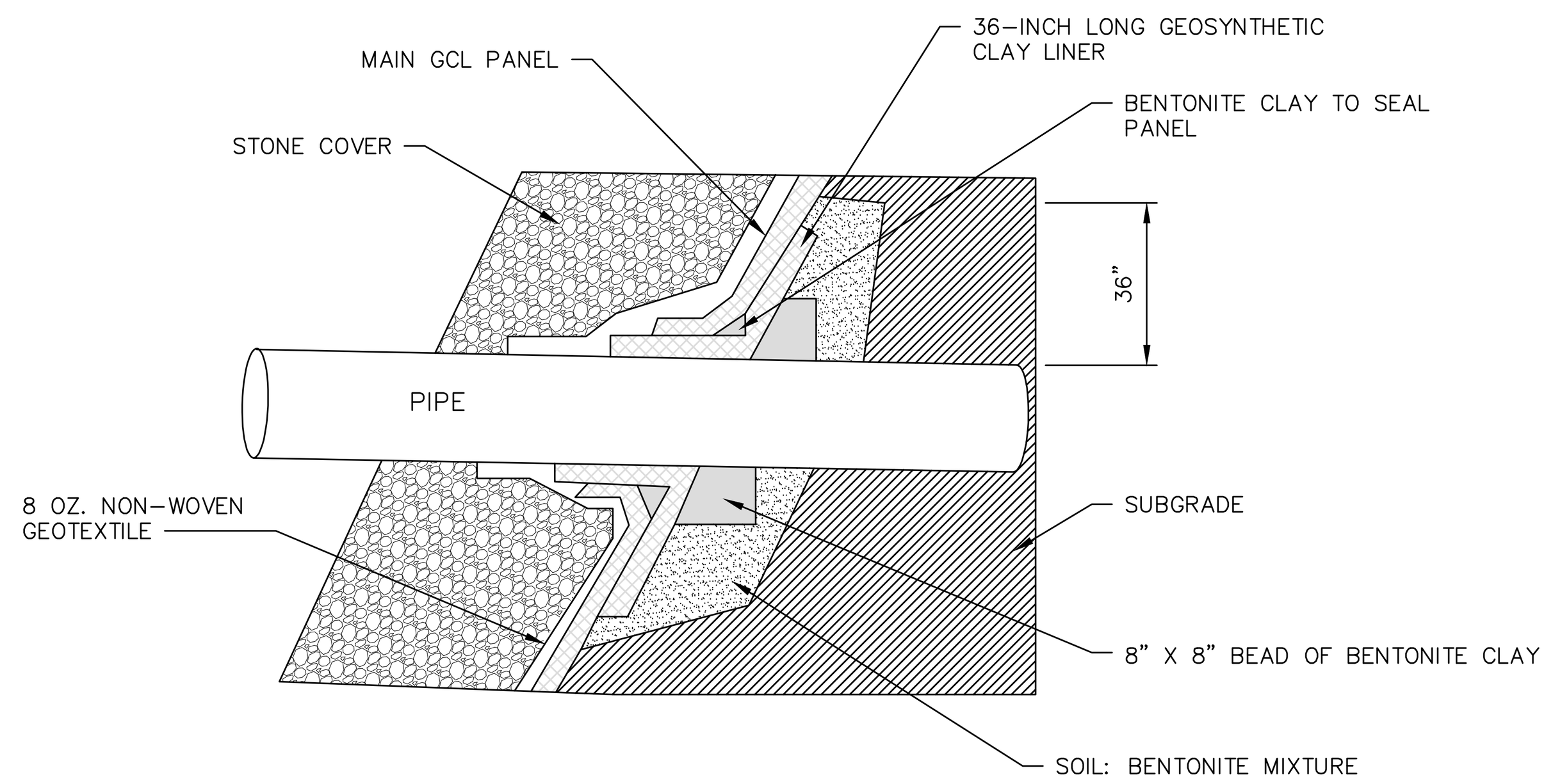
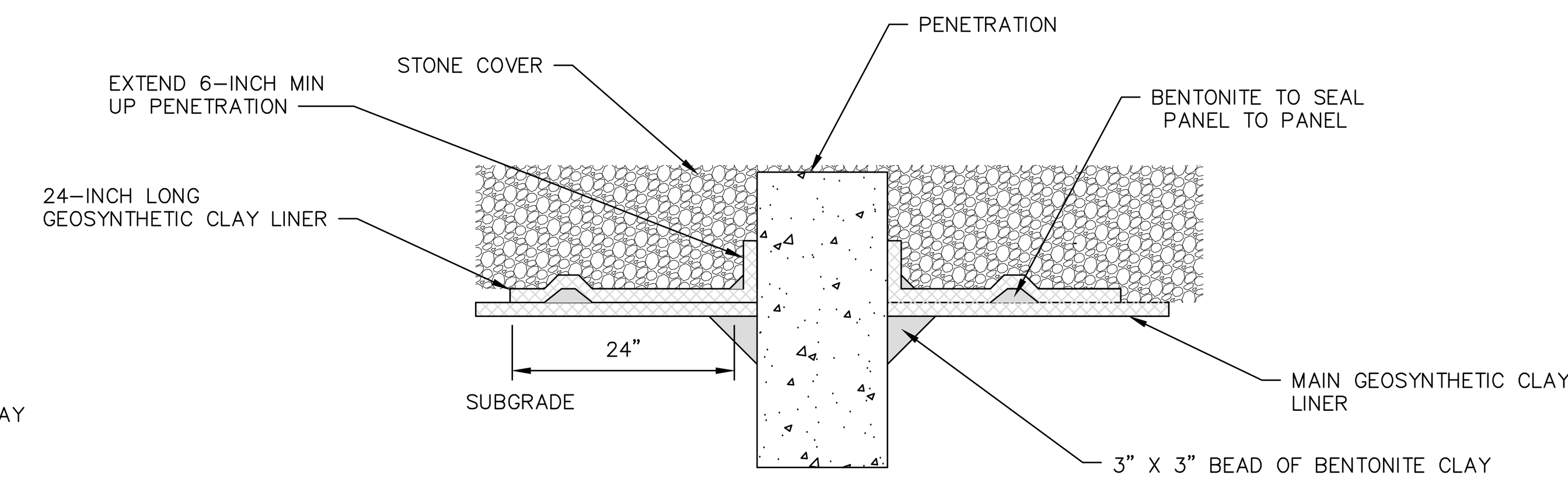


PIPE PENETRATION SEAL
NO SCALE



PENETRATION SEAL DETAIL
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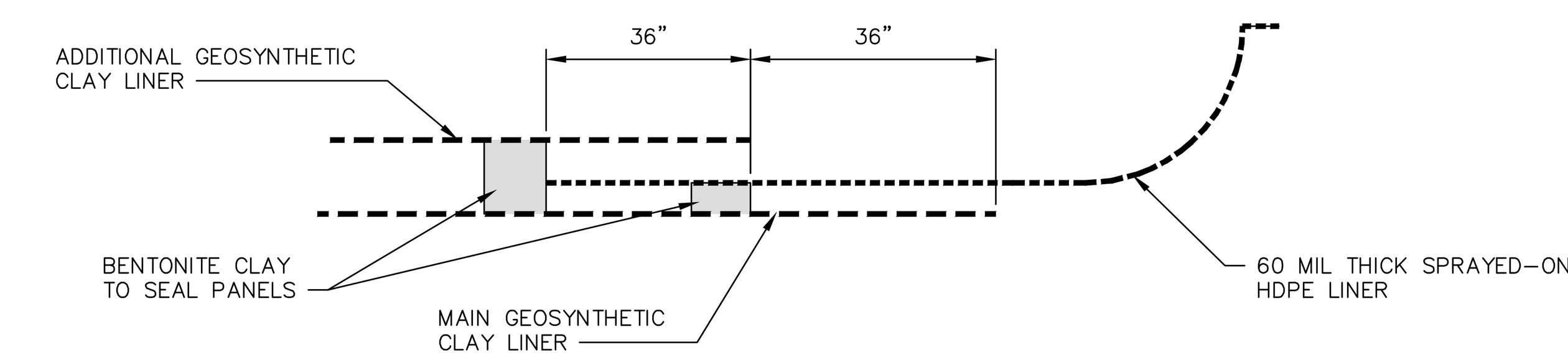
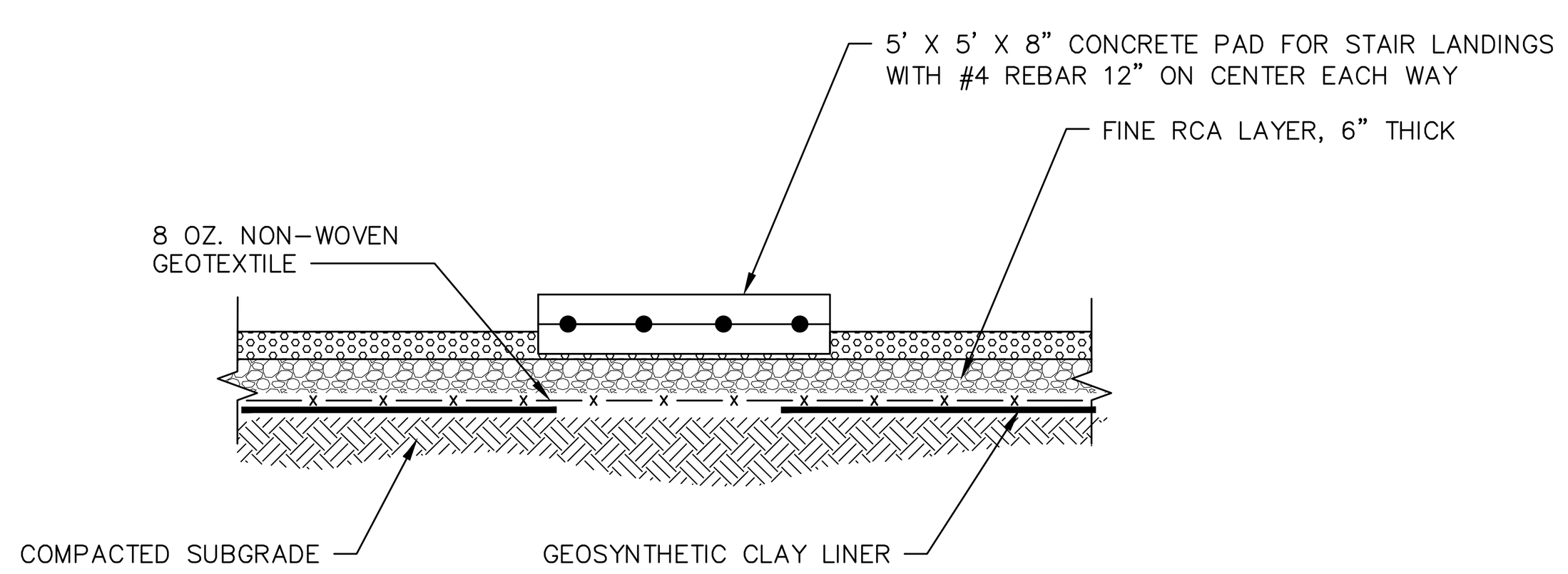
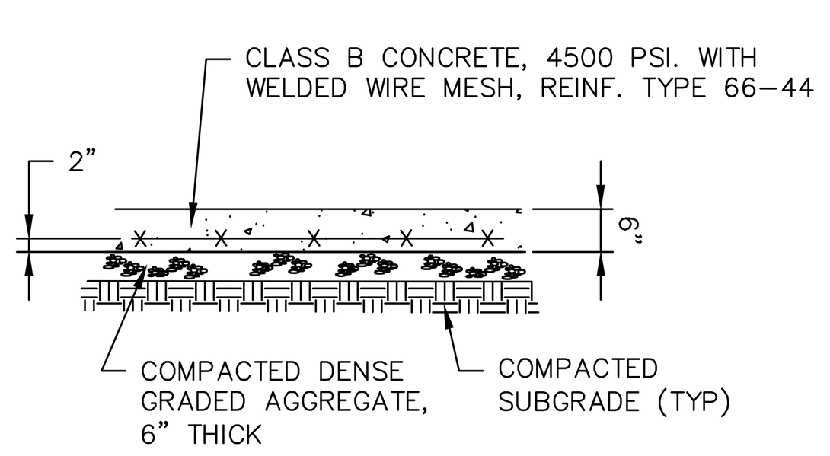


GCL/POLYUREA INTERFACE
NO SCALE

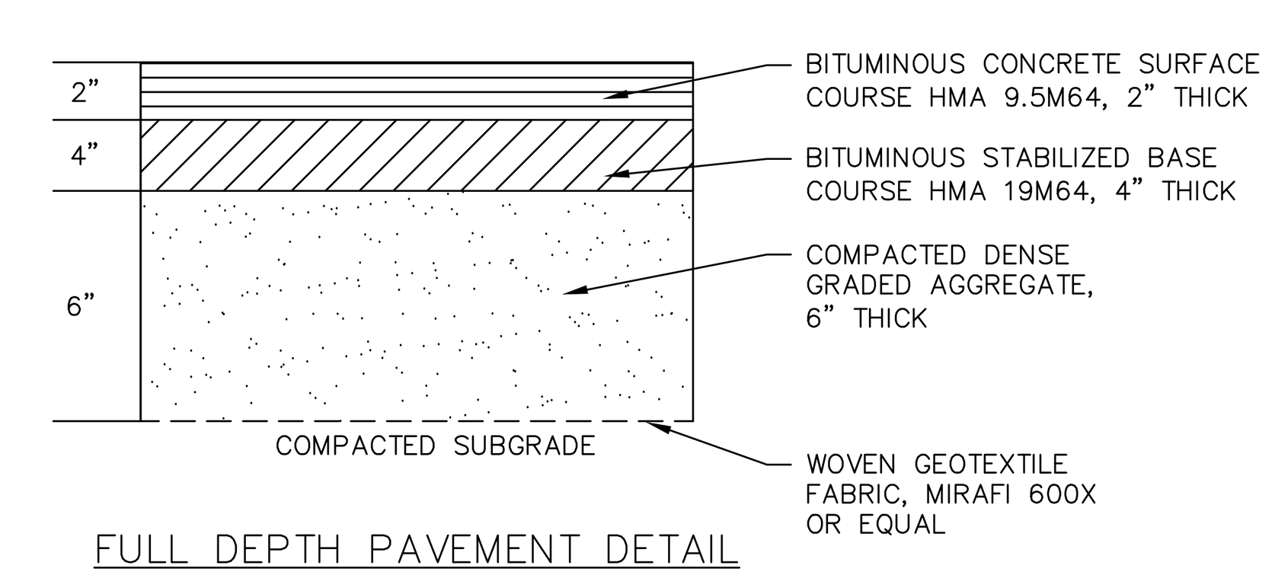


NOTE: STAIR LANDING HEIGHTS AND SIZES WILL VARY SLIGHTLY DUE TO LOCATIONS AND EXISTING STRUCTURES.

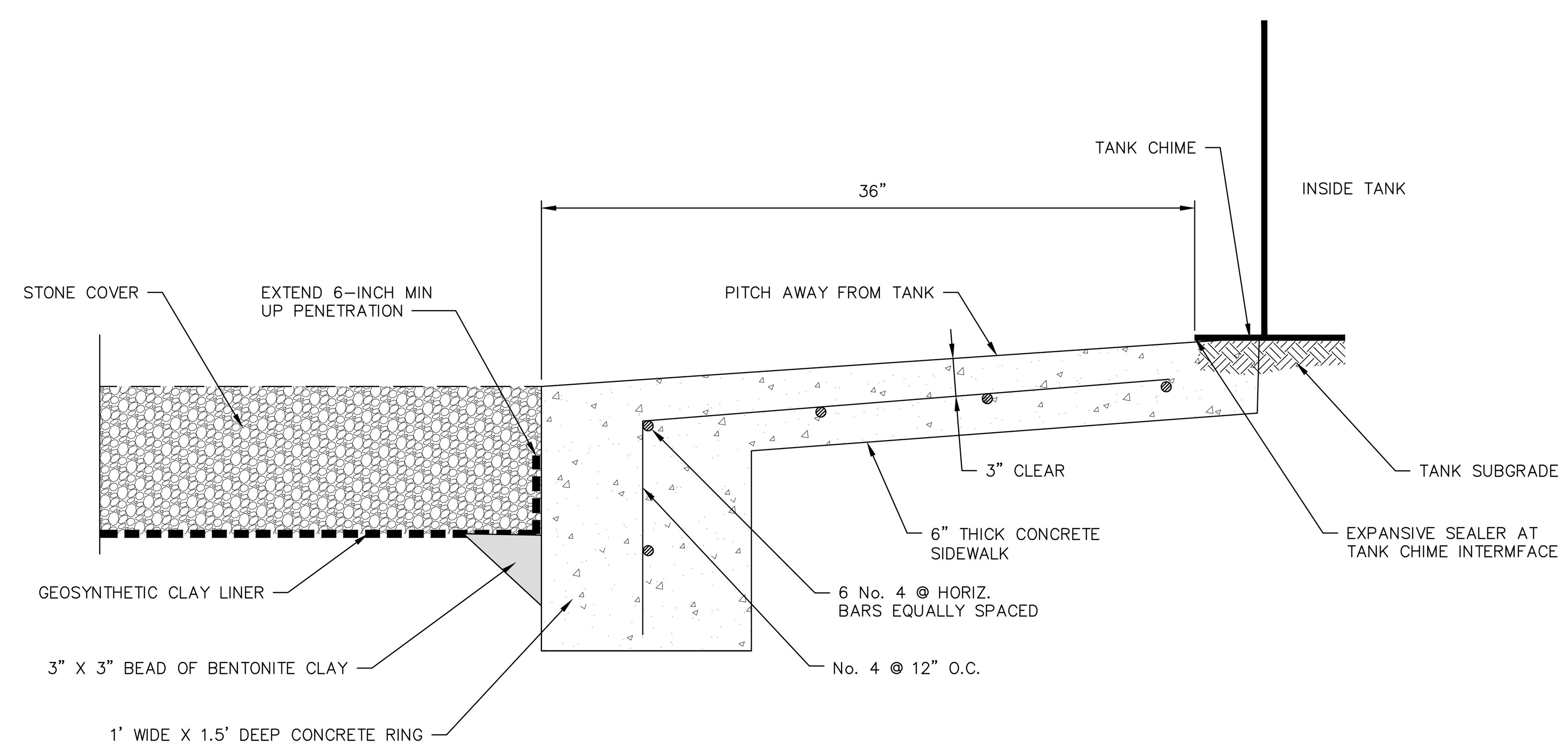
CONCRETE STAIR LANDING PAD DETAIL
NO SCALE



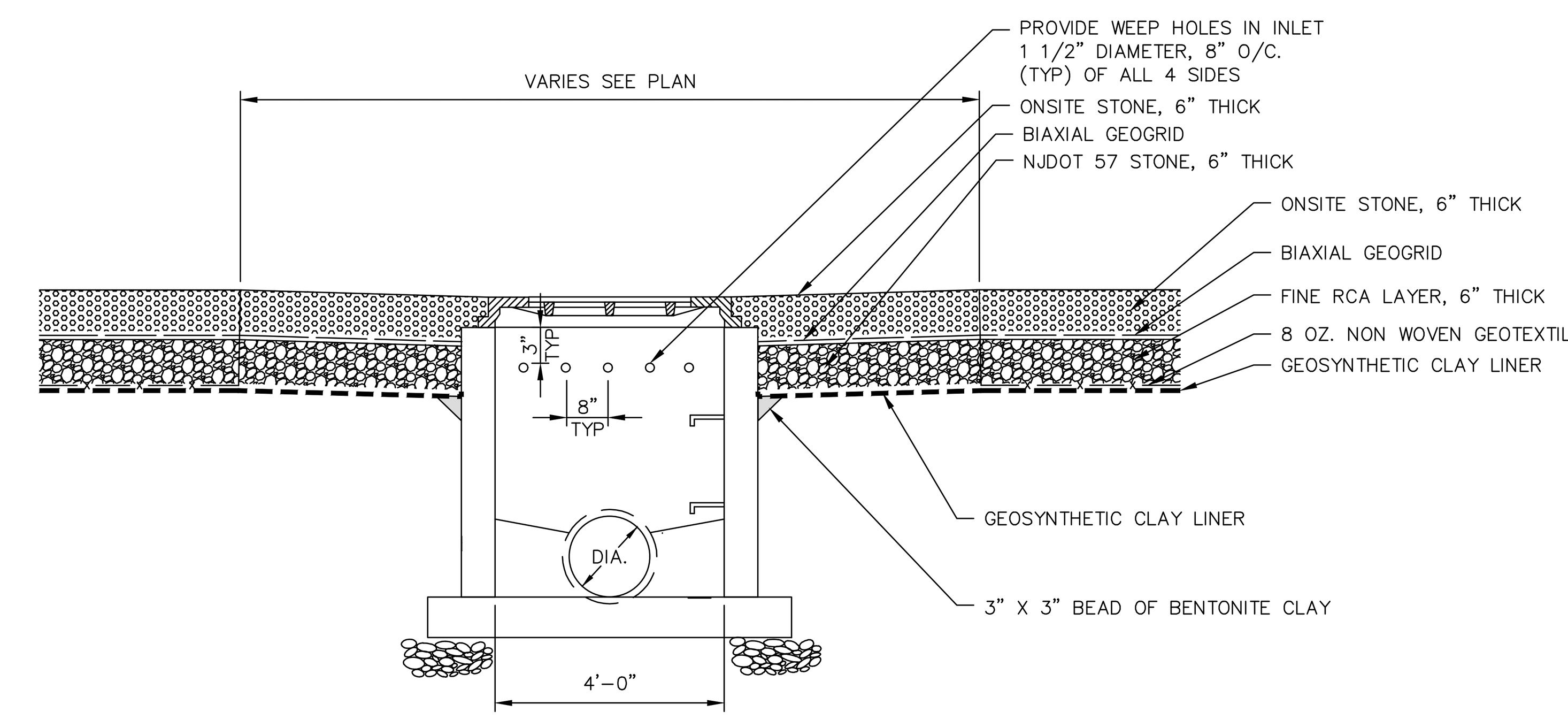
CONCRETE AREA REPLACEMENT DETAIL
NO SCALE



FULL DEPTH PAVEMENT DETAIL
FOR NON-LINED AREAS
NO SCALE

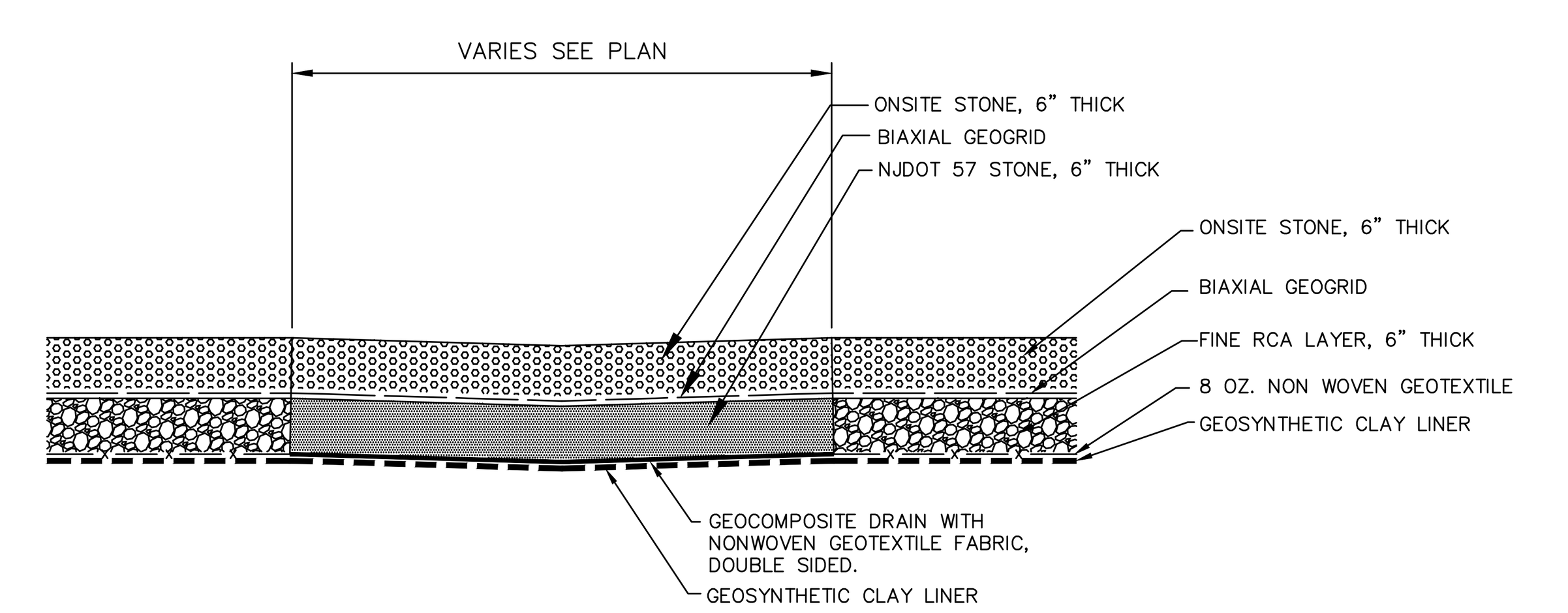


TANKS ON EARTH
SEAL GCL TO CONCRETE RING
NO SCALE



SECTION A-A

LINER TIE IN AND GEOCOMPOSITE COLLECTION AREA DETAIL
NO SCALE



GEOCOMPOSITE DRAINAGE CHANNEL
NOT TO SCALE

FOR REVIEW PURPOSES ONLY
NOT FOR CONSTRUCTION

NOTE: OTHER PENETRATIONS MAY EXIST AT THE SITE THAT ARE NOT ADDRESSED WITHIN THESE CONSTRUCTION PLANS. OTHER PENETRATIONS TO BE ADDRESSED DURING CONSTRUCTION BY THE APPROVAL OF THE ENGINEER.

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX Pittsburgh, PA Williamsport, PA

THE LOCATION OF FACILITY SUBSURFACE STRUCTURES, EQUIPMENT, UTILITIES OR PIPING MAY NOT BE SHOWN HEREON. IF SHOWN, LOCATION MUST BE CONSIDERED AS APPROXIMATE ONLY. FOLLOW REQUIRED ONE-CALL OR FACILITY PROCEDURES PRIOR TO EXCAVATING OR PROBING TO DETERMINE ACTUAL CONDITIONS.

STV PROJECT No.: 38-19085

PAGE 4

NO	LOC	DESCRIPTION OF REVISION	BY DATE	APPR DATE
B		ISSUED FOR REVIEW	RRJ 03/06/20	SPG 03/06/20
A		ISSUED FOR REVIEW	RRJ 02/21/20	SPG 02/21/20

WORK ORDER NO.

BUCKEYE PIPE LINE CO.
PORT READING TERMINAL

DRAINAGE & CONTAINMENT IMPROVEMENTS
CONSTRUCTION DETAILS
FOR THE 7945 TANK FIELD
PORT READING TERMINAL, PORT READING, NJ

DRAWN: RRJ	SCALE: NONE	DATE: 02-18-2020	
APPROVED:	CHECKED: SPG	38-19085-Tank7945-C-501 DRAWING NUMBER	REV B

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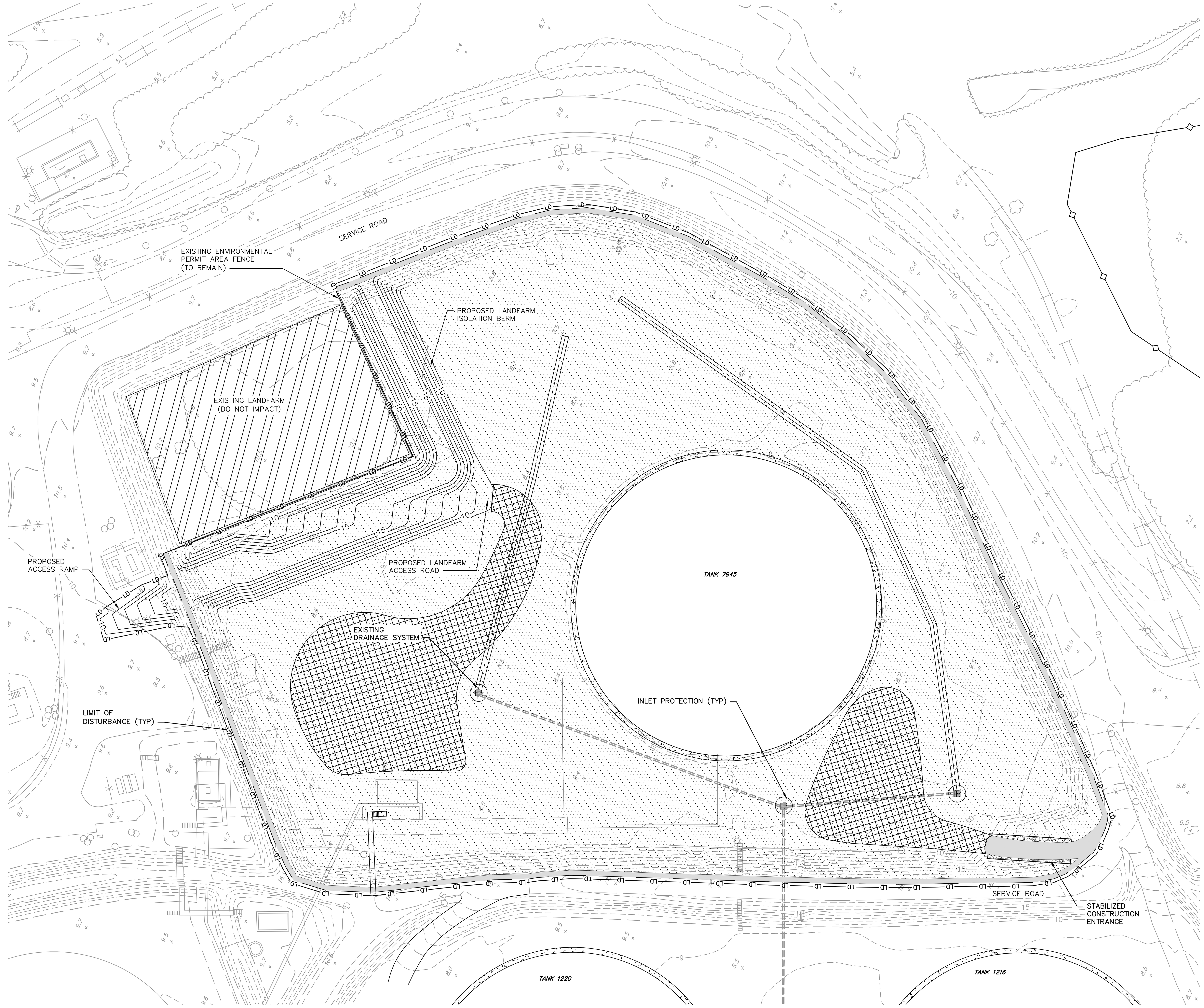


PLAN
SCALE: 1"=50'

SOIL EROSION AND SEDIMENT CONTROL NOTES

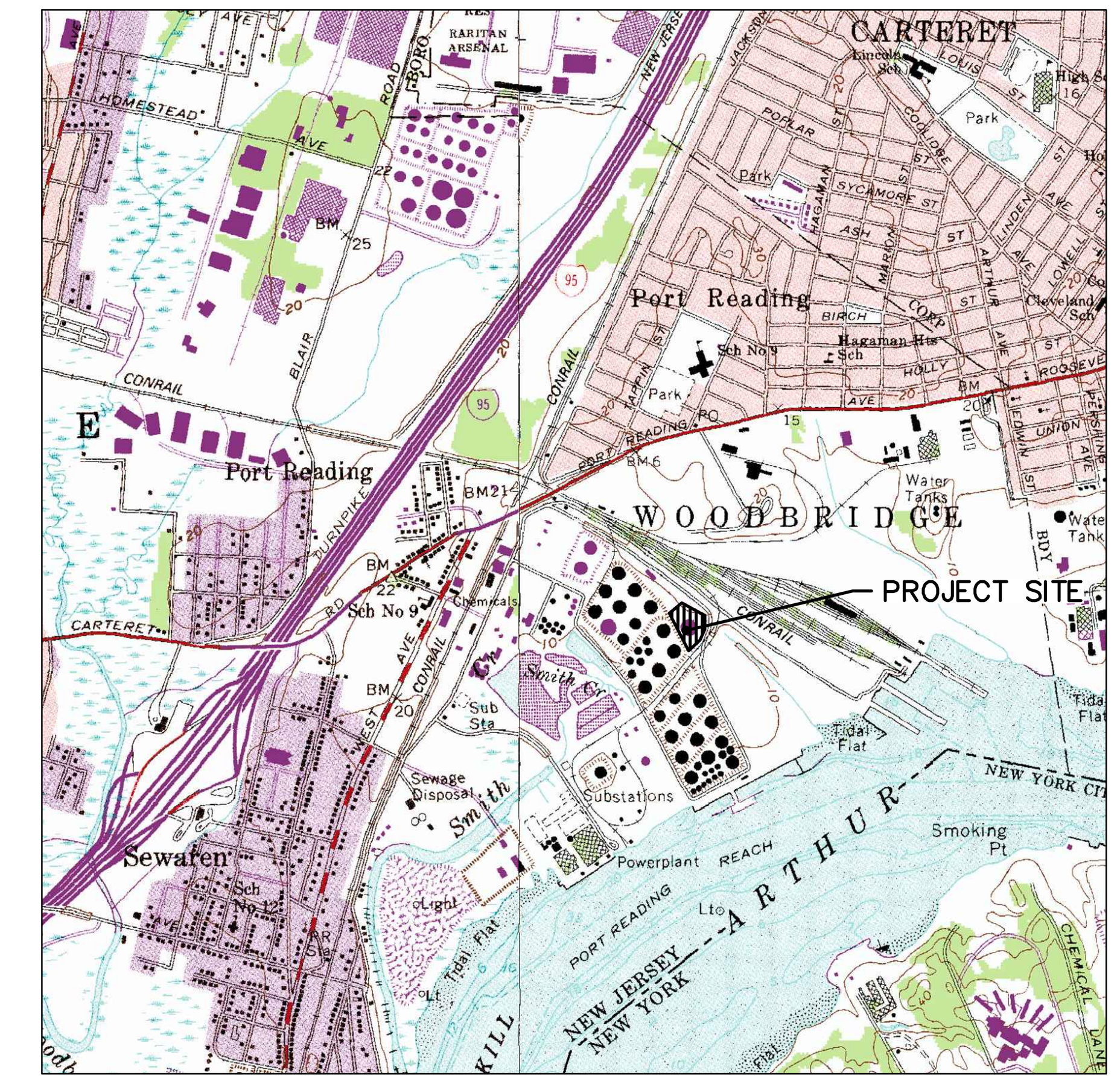
1. THE FREEHOLD SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY.
2. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
3. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
4. N.J.S.A 4:24-39 ET. SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE DISTRICT DETERMINES THAT A PROJECT OR PORTION THEREOF IS IN FULL COMPLIANCE WITH THE CERTIFIED PLAN AND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY AND A REPORT OF COMPLIANCE HAS BEEN ISSUED. UPON WRITTEN REQUEST FROM THE APPLICANT, THE DISTRICT MAY ISSUE A REPORT OF COMPLIANCE WITH CONDITIONS ON A LOT-BY-LOT OR SECTION-BY-SECTION BASIS, PROVIDED THAT THE PROJECT OR PORTION THEREOF IS IN SATISFACTORY COMPLIANCE WITH THE SEQUENCE OF DEVELOPMENT AND TEMPORARY MEASURES FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN IMPLEMENTED, INCLUDING PROVISIONS FOR STABILIZATION AND SITE WORK.
5. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN SIXTY (60) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 2 ½ TONS PER ACRE, ACCORDING TO STATE STANDARD FOR STABILIZATION WITH MULCH ONLY.
6. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AND A MULCH ANCHOR, IN ACCORDANCE WITH STATE STANDARDS.
7. A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF THE PRELIMINARY GRADING.
8. THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE. AFTER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOTS REQUIRE A STABILIZED CONSTRUCTION ENTRANCE CONSISTING OF ONE INCH TO TWO INCH (1" - 2") STONE FOR A MINIMUM LENGTH OF TEN FEET (10') EQUAL TO THE LOT ENTRANCE WIDTH. ALL OTHER ACCESS POINTS SHALL BE BLOCKED OFF.
9. ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAYS WILL BE REMOVED IMMEDIATELY.
10. PERMANENT VEGETATION IS TO BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING.
11. AT THE TIME THAT SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT IT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
12. IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDES SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS/ACRE, (OR 450 LBS/SQ FT OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12" OF SETTLED SOIL WITH A PH OF 5 OR MORE, OR 24" WHERE TREES OR SHRUBS ARE TO BE PLANTED.
13. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
14. UNFILTERED DEWATERING IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DEWATERING OPERATIONS TO MINIMIZE SEDIMENT TRANSFER. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DEWATERING.
15. SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET, TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR DUST CONTROL.
16. STOCKPILE AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN. STAGING AND STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE CERTIFICATION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED FOR THESE ACTIVITIES IF AN AREA GREATER THAN 5,000 SQUARE FEET IS DISTURBED.
17. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #6.
18. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

    FREEHOLD SOIL CONSERVATION DISTRICT
    4000 KOZLOSKI ROAD
    FREEHOLD NEW JERSEY 07728
    (732) 683-8500

CONSTRUCTION SCHEDULE AND PROCEDURE FOR IMPLEMENTATION OF SOIL EROSION AND SEDIMENT CONTROL MEASURES

1. REMOVE 12" OF EXISTING STONE AND SOIL COVER AND STOCKPILE. INSTALL STABILIZED CONSTRUCTION ENTRANCES. (1 MONTH).
2. INSTALL LINER AND DRAINAGE IMPROVEMENTS, PROVIDE INLET PROTECTION. (6 MONTHS).
3. RESTORE EXISTING STONE COVER OVER PROPOSED LINER SECTION ON BOTTOM OF CONTAINMENT AREA FOLLOWING COMPLETION OF LINER AND DRAINAGE IMPROVEMENTS (1 MONTH). SIDE SLOPES ARE TO BE COVERED IN NEW CLEAN STONE NOT TO EXCEED A 3/4" SIEVE.
4. PLACE MATERIAL STOCKPILE AS SHOWN ON PLANS. STABILIZE SIDES WITH MULCH AND SEED ENTIRE STOCKPILE.
5. PAVE ACCESS DRIVEWAYS AND ASPHALT RAMPS (1 MONTH).
6. REMOVE ACCESS PROTECTION AND INLET PROTECTION WHEN ALL AREAS HAVE BEEN STABILIZED. (ON GOING FROM COMMENCEMENT OF PROJECT).

THE ABOVE SCHEDULE IS FOR THE IMPLEMENTATION AND INSTALLATION OF SOIL EROSION AND SEDIMENT CONTROL MEASURES ONLY. CONTRACTOR MAY MODIFY AND/OR CREATE HIS OWN SCHEDULE. IF THE CONSTRUCTION SCHEDULE IS MODIFIED, A REVISION TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED.



LOCATION MAP
NO SCALE

NOTES:

1. SEE COVER SHEET FOR LEGEND.
2. UTILITY LOCATIONS AND ELEVATIONS ARE ESTIMATED UNLESS SPECIFIC TEST HOLE LOCATIONS ARE CALLED OUT. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. THERE SHALL BE A MINIMUM OF 1'-0" OF VERTICAL CLEARANCE BETWEEN THE PROPOSED BUCKEYE PIPELINE AND OTHER UTILITIES, UNLESS OTHERWISE NOTED.
4. THESE DOCUMENTS ARE BASED UPON THE FOLLOWING INFORMATION:

    TOPOGRAPHIC INFORMATION SHOWN IS BASED ON AERIAL PHOTOGRAPHY DATED JULY 22, 2015 AND SUPPLEMENTED WITH FACILITY BASE PLANS PROVIDED BY BUCKEYE PIPELINE CO. LIMITED TOPOGRAPHIC SURVEY PERFORMED BY STV IN DECEMBER 2017 TO CONFIRM SEWER LOCATIONS FOR THE 3RD TANK FIELD, DECEMBER 2018 TO CONFIRM INFORMATION FOR THE 7945 TANK FIELD, AND FEBRUARY 2020 TO CONFIRM STORM LOCATIONS FOR THE 7945 TANK FIELD.

    HORIZONTAL DATUM IS NAD 1983. VERTICAL DATUM IS NAVD 1988.

5. LIMIT OF DISTURBANCE = ± 3.823 ACRES (± 166,527 S.F.).

LEGEND:

- PROPOSED GEOSYNTHETIC CLAY LINER SECTION
- EXISTING ASPHALT RAMP TO BE REMOVED AND REPLACED
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED INCREASED STONE SECTION FOR DRIVING AISLE
- (IP) PROPOSED LIMIT OF DISTURBANCE
- —LD— PROPOSED SAWCUT LINE

FOR REVIEW PURPOSES ONLY
NOT FOR CONSTRUCTION

GRAPHIC SCALE
1"=50' 50' 0 50' 100'

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX Pittsburgh, PA Williamsport, PA

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STV PROJECT No.: 38-19085

NO	LOC	DESCRIPTION OF REVISION	BY DATE	APPR DATE
B		ISSUED FOR REVIEW	RRJ 03/06/20	SPG 03/06/20
A		ISSUED FOR REVIEW	RRJ 02/21/20	SPG 02/21/20

WORK ORDER NO.

BUCKEYE PIPE LINE CO.
PORT READING TERMINAL

DRAINAGE & CONTAINMENT IMPROVEMENTS
SOIL EROSION AND SEDIMENT CONTROL PLAN
FOR THE 7945 TANK FIELD
PORT READING TERMINAL, PORT READING, NJ

DRAWN: RRJ	SCALE: 1"=30'	DATE: 02-18-2020	REV
APPROVED:	CHECKED: SPG	38-19085-Tank7945-C-701 DRAWING NUMBER	B

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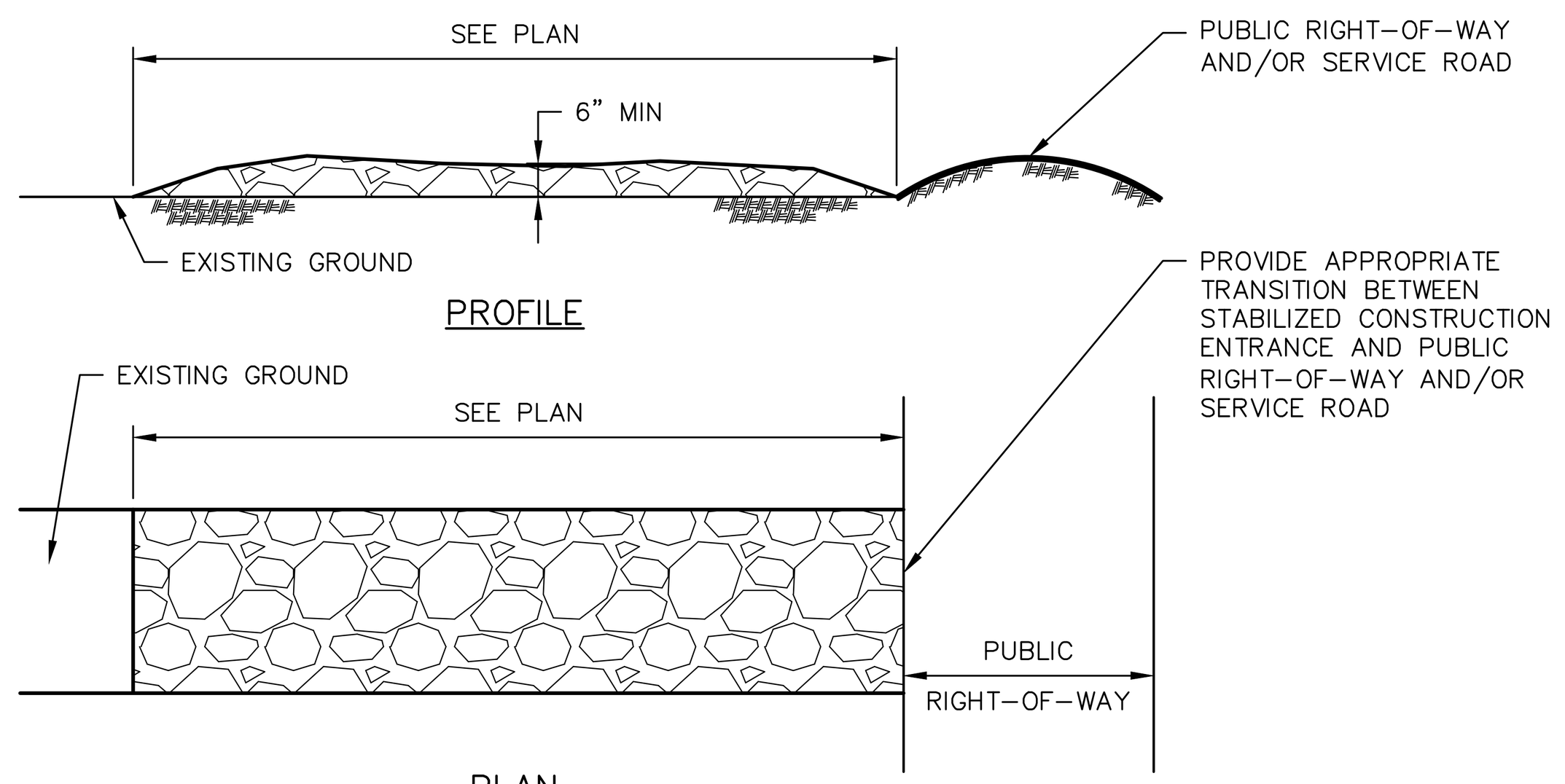


PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COURSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FEET	100 FEET
2% TO 5%	100 FEET	200 FEET
> 5%	ENTIRE SURFACE STABILIZED WITH HOT MIX ASPHALT BASE COURSE, MIX I-2	

STABILIZED CONSTRUCTION ENTRANCE

NO SCALE

CONSTRUCTION SPECIFICATIONS

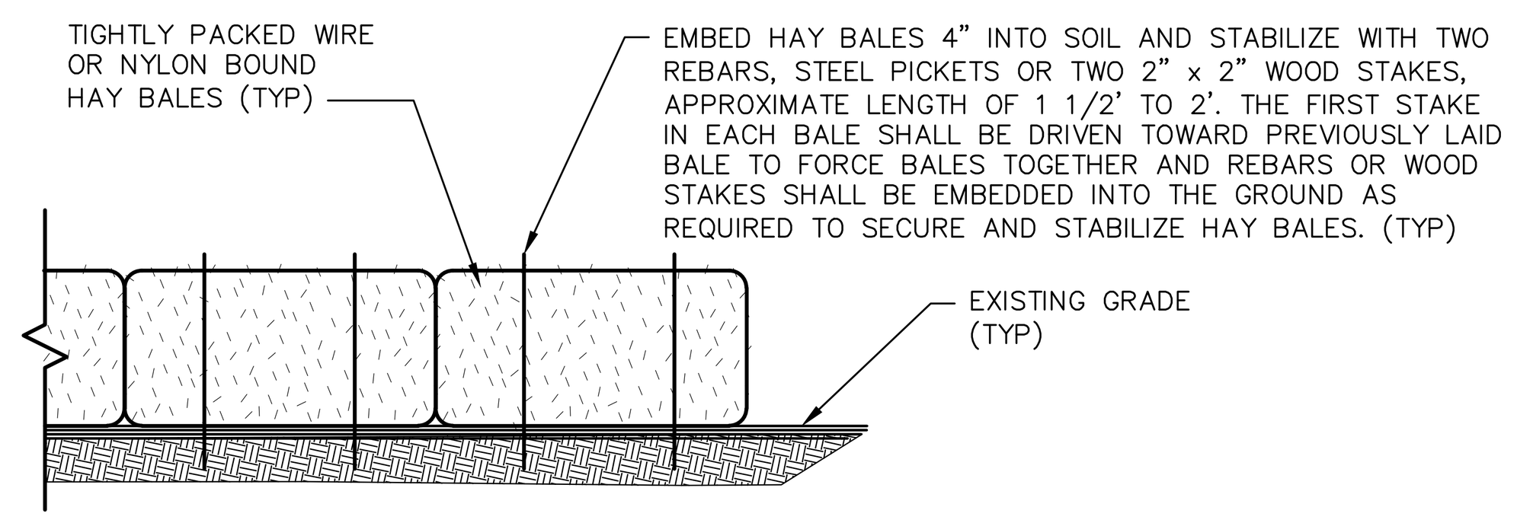
1. STONE SIZE – USE ASTM C-33, SIZE NO. 2 (2½ TO 1½ IN.) OR 3 (2 TO 1 IN.). USE CLEAN CRUSHED ANGULAR STONES. CRUSHED CONCRETE OF SIMILAR SIZE MAY BE SUBSTITUTED BUT WILL REQUIRE MORE FREQUENT UPGRADING AND MAINTENANCE.
2. LENGTH – 50 FEET MINIMUM WHERE SOILS ARE COURSE GRAINED (SAND OR GRAVEL), OR 100 FEET MINIMUM WHERE SOILS ARE FINE GRAINED (CLAYS OR SILTS), EXCEPT WHERE THE TRAVEL LENGTH IS LESS THAN 50 OR 100 FEET RESPECTIVELY. THESE LENGTHS MAY BE INCREASED WHERE FIELD CONDITIONS DICTATE. STORMWATER FROM UP-SLOPE AREAS SHALL BE DIVERTED AWAY FROM THE STABILIZED PAD (SEE STANDARD FOR DIVERSIONS). WHERE DIVERSION IS NOT POSSIBLE, THE LENGTH OF THE STABILIZED PAD SHALL BE SHOWN AS IN TABLE ABOVE. WHERE THE SLOPE OF THE ACCESS ROAD EXCEEDS 5%, A STABILIZED BASE OF HOT MIX ASPHALT BASE COURSE, MIX I-2, SHALL BE INSTALLED. THE TYPE AND THICKNESS OF THE BASE COURSE AND USE OF A DENSE GRADED AGGREGATE SUB-BASE SHALL BE AS PRESCRIBED BY LOCAL MUNICIPAL ORDINANCE OR OTHER GOVERNING AUTHORITY.

   AT POORLY DRAINED LOCATIONS, SUBSURFACE DRAINAGE GRAVEL FILTER OR GEOTEXTILE SHALL BE INSTALLED BEFORE INSTALLING THE STABILIZED CONSTRUCTION ENTRANCE.

   WHERE A STABILIZED CONSTRUCTION ENTRANCE EXIT TRAVERSES BETWEEN TWO BUILDINGS, IT SHALL BE STONED THE ENTIRE LENGTH OF THE RIGHT-OF-WAY. MOUNTABLE STONE BERMS PLACED ACROSS THE WIDTH OF THE EXIT MAY ALSO BE REQUIRED AT THE TRANSITION POINT BETWEEN PAVED AND NON-PAVED AREAS TO TRAP SEDIMENTS WHICH ARE CARRIED BY STORMWATER FLOWING ALONG THE CURBLINE.
3. THICKNESS – NOT LESS THAN 6 INCHES.
4. WIDTH – NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. TIRE WASHING – IF SPACE IS LIMITED, VEHICLE TIRES MAY BE WASHED WITH CLEAN WATER BEFORE ENTERING A PAVED AREA. A WASH STATION MUST BE LOCATED SUCH THAT WATER WILL NOT FLOW ONTO PAVED ROADWAYS OR INTO UNPROTECTED STORM DRAINAGE SYSTEMS.

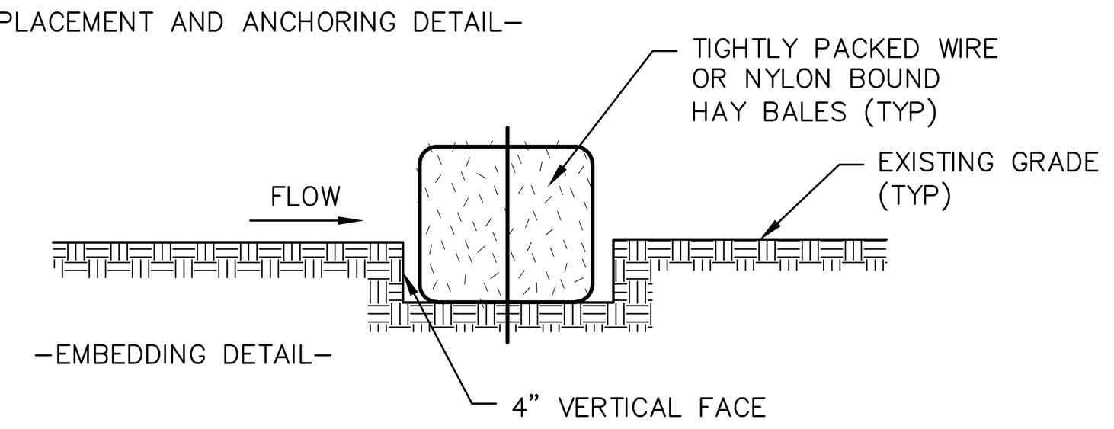
   WHEN THE CONSTRUCTION ACCESS EXITS ONTO A MAJOR ROADWAY, A PAVED TRANSITION AREA MAY BE INSTALLED BETWEEN THE MAJOR ROADWAY AND THE STONED ENTRANCE TO PREVENT LOOSE STONES FROM BEING TRANSPORTED OUT ONTO THE ROADWAY BY THE HEAVY EQUIPMENT ENTERING OR LEAVING THE SITE.
6. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS (PRIVATE OR PUBLIC) OR OTHER IMPERVIOUS SURFACES MUST BE REMOVED IMMEDIATELY.

   WHERE ACCUMULATION OF DUST/SEDIMENT IS INADEQUATELY CLEANED OR REMOVED BY CONVENTIONAL METHODS, A POWER BROOM OR STREET SWEEPER WILL BE REQUIRED TO CLEAN PAVED OR IMPERVIOUS SURFACES. ALL OTHER ACCESS POINTS WHICH ARE NOT STABILIZED SHALL BE BLOCKED OFF.



ALL BALES SHALL BE SECURELY TIED AND STAKED ON THE CONTOUR.

–PLACEMENT AND ANCHORING DETAIL–



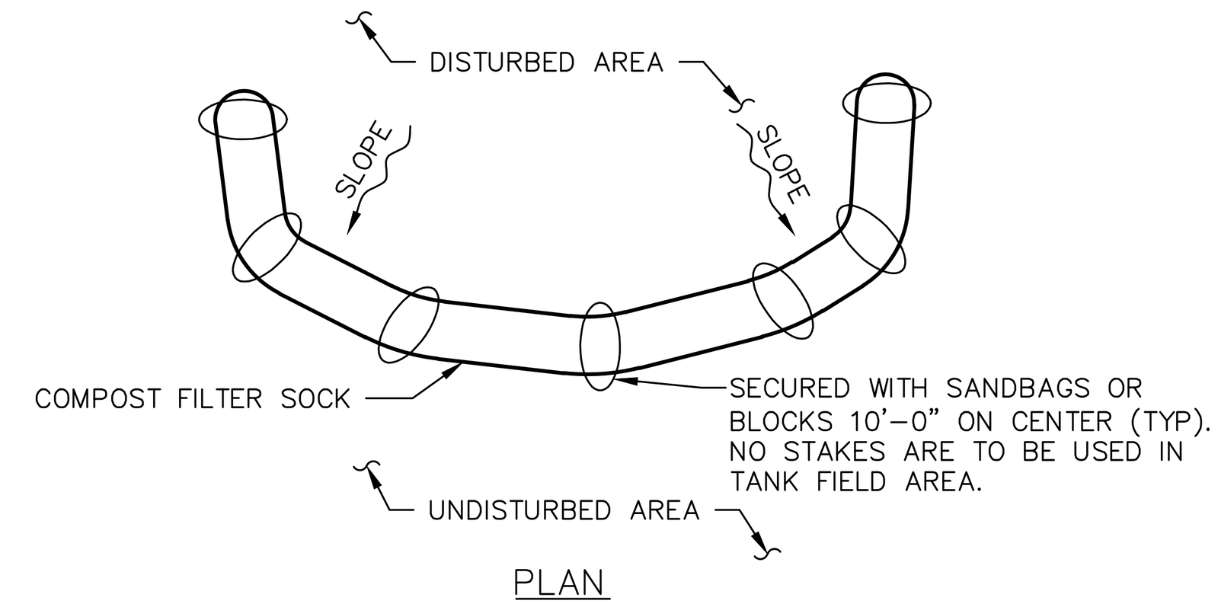
–EMBEDDING DETAIL–

NOTES:

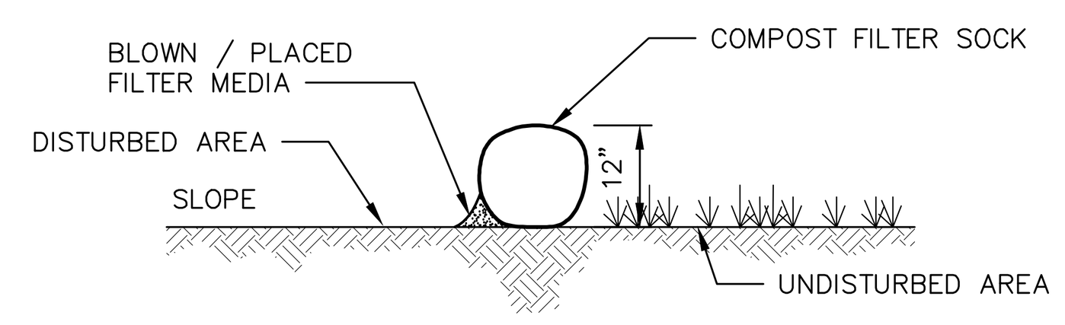
1. HAY BALES SHALL CONSIST OF TIMOTHY, REDTOP OR NATIVE GRASSES. STRAW SHALL BE STALKS OF OAT, WHEAT, RYE OR BARLEY RELATIVELY FREE FROM SEED, NOXIOUS WEEDS AND FOREIGN MATTER, FREE FROM DECAY MATTER AND FROM ORGANIC MATTER SOLUBLE IN WATER AND SHALL BE BOUND WITH WIRE OR BALING TWINE. THE TWINE SHALL BE AN ULTRAVIOLET LIGHT STABILIZED POLYPROPYLENE, WHICH HAS KNOT STRENGTH OF 170 POUNDS AND STRAIGHT STRENGTH OF 300 POUNDS.
2. WOOD STAKES POSTS AND BOARD SHALL BE SOLID, REASONABLY KNOT-FREE LUMBER CONFORMING TO THE NOMINAL SIZE SPECIFIED ON THE PLANS.

HAY BALE SEDIMENT BARRIERS

NO SCALE



PLAN



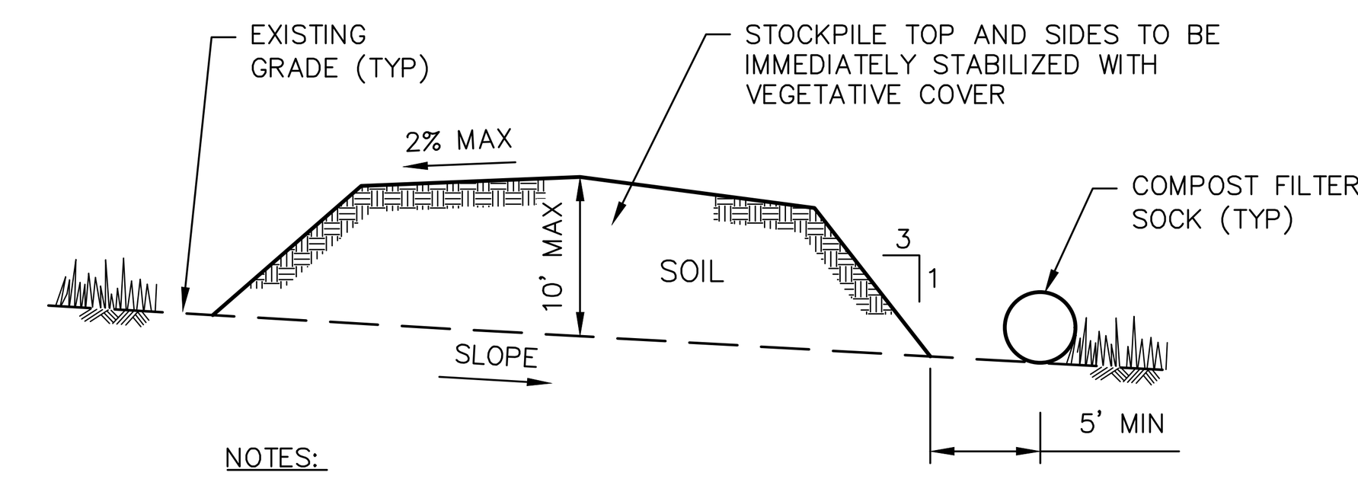
SECTION

COMPOST FILTER SOCK

NO SCALE

NOTES

1. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
2. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE COMPOST FILTER SOCK.
4. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
5. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS, PHOTODEGRADABLE SOCKS SHALL BE REPLACED AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
6. HEAVY CONCRETE BLOCKS OR SANDBAGS SHALL BE USED BEHIND COMPOST FILTER SOCKS.

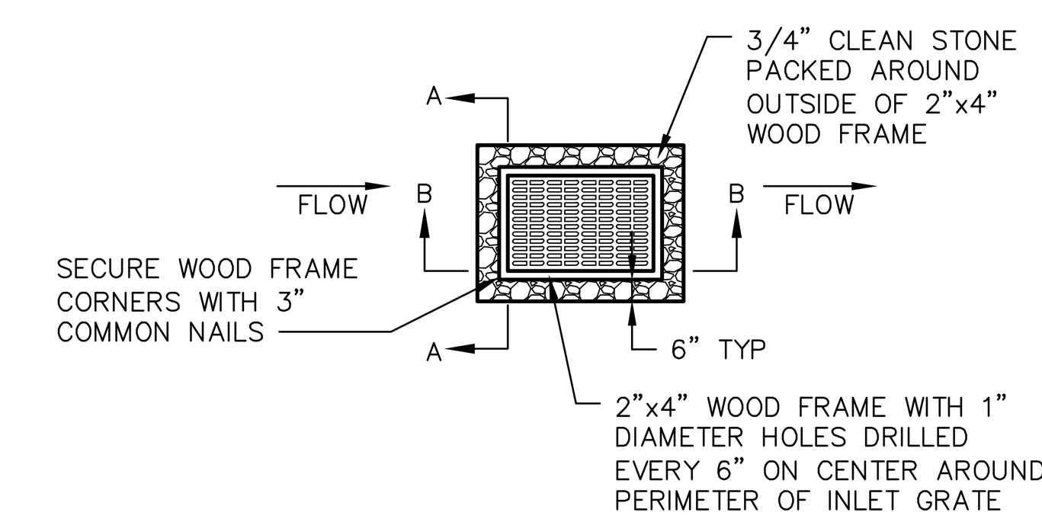


NOTES:

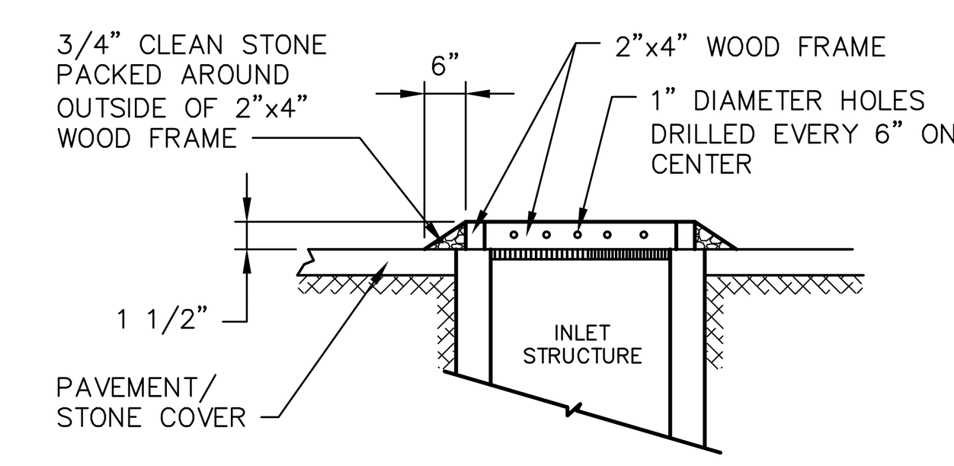
1. SOIL STOCKPILES TO BE PLACED AS DETERMINED IN THE FIELD.
2. IF STOCKPILED FOR MORE THAN 30 DAYS, PERMANENT STABILIZATION MEASURES MUST BE IMPLEMENTED.
3. STOCKPILE AREA MAY BE RELOCATED TO AVOID CONFLICT WITH CURRENT CONSTRUCTION OPERATIONS WITHIN THE LIMIT OF DISTURBANCE.

SOIL STOCKPILE

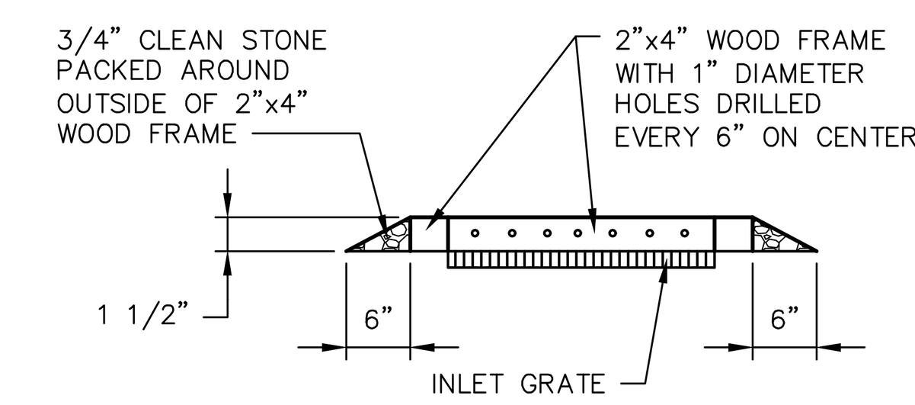
NO SCALE



PLAN



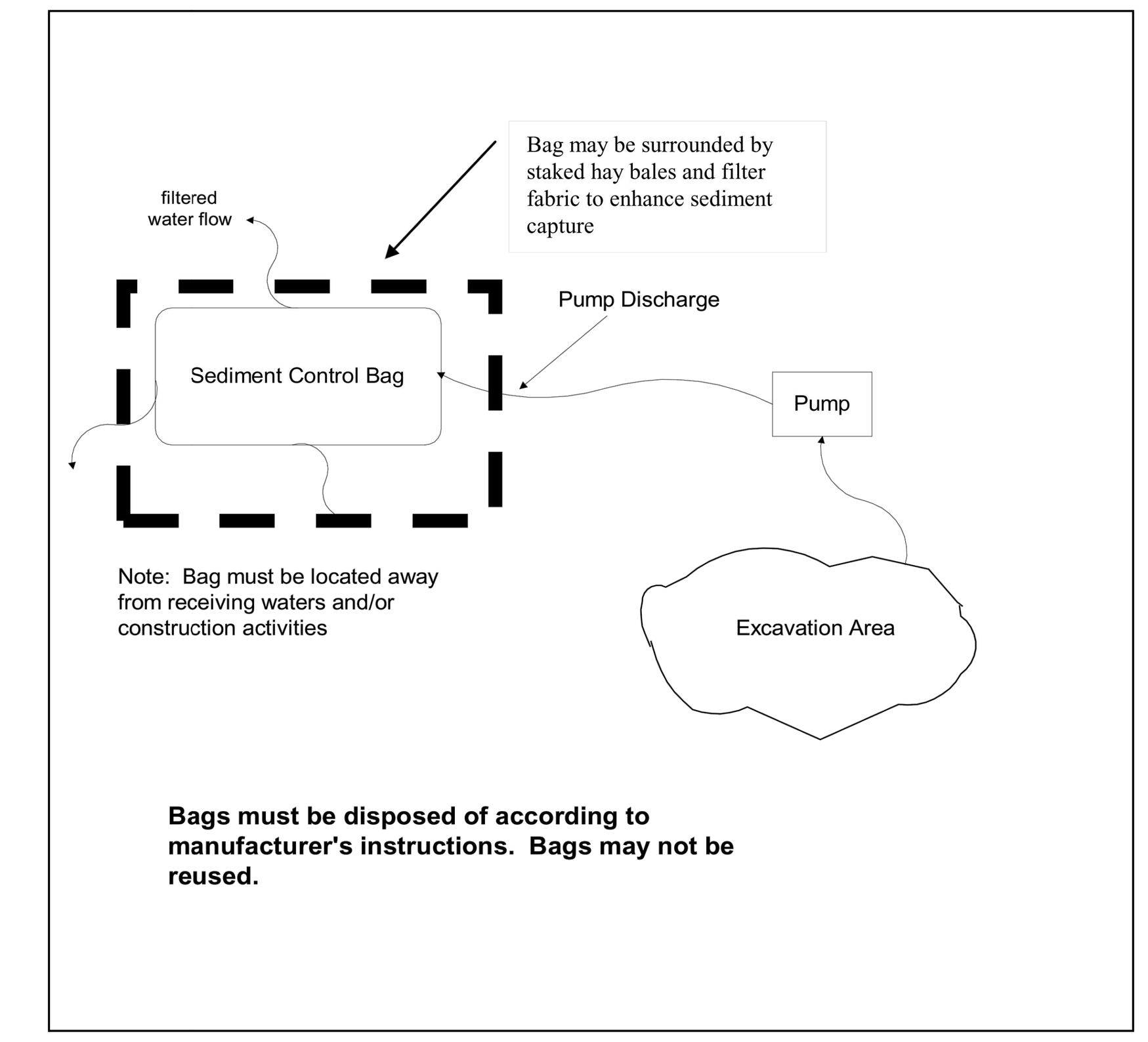
SECTION A–A



SECTION B–B

INLET PROTECTION DETAIL

NO SCALE



DEWATERING DETAIL

NO SCALE

FOR REVIEW PURPOSES ONLY
NOT FOR CONSTRUCTION

NO	LOC	DESCRIPTION OF REVISION	BY DATE	APPR DATE
B		ISSUED FOR REVIEW	RRJ 03/06/20	SPG 03/06/20
A		ISSUED FOR REVIEW	RRJ 02/21/20	SPG 02/21/20

WORK ORDER NO.

BUCKEYE PIPE LINE CO.
PORT READING TERMINAL

DRAINAGE & CONTAINMENT IMPROVEMENTS
SOIL EROSION AND SEDIMENT CONTROL DETAILS
FOR THE 7945 TANK FIELD
PORT READING TERMINAL, PORT READING, NJ

DRAWN: RRJ	SCALE: NONE	DATE: 02-18-2020	REV
APPROVED:	CHECKED: SPG	38-19085-Tank7945-C-702 DRAWING NUMBER	B

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX Pittsburgh, PA Williamsport, PA

THE LOCATION OF FACILITY SUBSURFACE STRUCTURES, EQUIPMENT, UTILITIES OR PIPING MAY NOT BE SHOWN HEREON. IF SHOWN, LOCATION MUST BE CONSIDERED AS APPROXIMATE ONLY. FOLLOW REQUIRED ONE-CALL OR FACILITY PROCEDURES PRIOR TO EXCAVATING OR PROBING TO DETERMINE ACTUAL CONDITIONS.

STV PROJECT No.: 38-19085

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PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION (IF REQUIRED)

1. SITE PREPARATION

   A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS, FOR LAND GRADING.

   B. IMMEDIATELY PRIOR TO SEEDING AND TOPSOILING APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.

   C. TOPSOIL SHOULD BE HANDLED ONLY WHEN ITS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER, AS NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING.

   D. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.

2. SEEDBED PREPARATION

   A. UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES (HTTP://NJAES.RUTGERS.EDU/COUNTY/). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 S.F. OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES. IF FERTILIZER IS NOT INCORPORATED, APPLY ONE-HALFTHE RATE DESCRIBED ABOVE DURING THE SEEDBED PREPARATION AND REPEAT ANOTHER ONE-HALF RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING.

   B. WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.

   C. HIGH ACID PRODUCING SOIL. SOILS HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A PH OF 5 OR MORE BEFORE INITIATING SEEDBED PREPARATION. SEE ACID SOIL NOTES.

3. SEEDING

   A. PERMANENT SEEDING SHALL CONSISTING OF THE FOLLOWING MIXES OR APPROVED EQUAL – ACCEPTABLE SEEDING DATES ARE BETWEEN MARCH 1 THRU APRIL 30 AND OPTIMAL SEEDING DATES ARE AUGUST 15 THRU OCTOBER 15:

HARD FESCUE	@ 4.0#/1,000 S.F.
PERENNIAL RYEGRASS	@ 1.0#/1,000 S.F.
KENTUCKY BLUEGRASS	@ 1.0#/1,000 S.F.

   PLEASE NOTE THAT OTHER SEED MIXTURES CAN BE USED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.

   B. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF ¼ TO ½ INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE ¼ INCH DEEPER ON COARSE-TEXTURED SOIL.

   C. AFTER SEEDING, FIRMING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

   D. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK, OR TRAILER-MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER, AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT-FINERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. WHEN POOR SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH.

4. MULCHING

   MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS REQUIREMENT.

   A. STRAW OR HAY. UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1 ½ TO 2 TONS ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO PRESENCE OF WEED SEED.

   APPLICATION- SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 95% OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTION 70 TO 90 POUNDS WITHIN EACH SECTION.

   ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS.

   1. PEG AND TWINE. DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRIS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.

   2. MULCH NETTING. STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTING TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.

   3. CRIMPER (MULCH ANCHORING COULTER TOOL) – A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.

   4. LIQUID MULCH BINDERS-MAY BE USED TO ANCHOR SALT HAY OR STRAW MULCH.

      a. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.

      b. USE ONE OF THE FOLLOWING:

         1. ORGANIC AND VEGETABLE BASED BINDERS – NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS THAT MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOTOXIC EFFECT OR IMPEDE GROWTH OF TURFGRASS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.

         2. SYNTHETIC BINDERS – HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A COMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.

   B. WOOD-FIBER OR PAPER-FIBER MULCH. SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1,500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. THIS MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

   C. PELLETIZED MULCH. COMPRESSED AND EXTRUDE PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO-POLYMERS, TACKIFIERS, FERTILIZERS AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDED AREA AND WATERED, FORMA MULCH MAT. PELLETIZED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60-75LBS/1,000 SQUARE FEET WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS, SEED AREAS WHERE WEED-SEED FREE MULCH IS DESIRED OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR DESIRABLE. APPLY THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

5. IRRIGATION (WHERE FEASIBLE)

   IF SOIL MOISTURE IS DEFICIENT, AND MULCH IS NOT USED, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH APPLIED UP TO TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.

6. TOPDRESSING

   SINCE SOIL ORGANIC MATER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTION 2A – SEEDBED PREPARATION IN THIS STANDARD, NO FOLLOW-UP OF TOPDRESSING IS MANDATORY. AN EXCEPTION MAY BE MADE WHERE GROSS NITROGEN DEFICIENCY EXISTS IN THE SOIL TO THE EXTENT THAT TURF FAILURE MAY DEVELOP. IN THAT INSTANCE, TOPDRESS WITH 10-10-10 OR EQUIVALENT AT 300 LBS PER ACRE OR 7 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELIORATED.

7. ESTABLISHED PERMANENT VEGETATIVE STABILIZATION

   THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4-3 ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN APPLICATION RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A REPORT OF COMPLIANCE FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF THE SEEDED SPECIES) AND MOWED ONCE. NOTE THIS DESIGNATION OF MOWED ONCE DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

ACID SOILS NOTES

IN ORDER TO PROVIDE SUITABLE CONDITIONS FOR GROWTH AND VEGETATION AND TO PREVENT THE ACIDIFYING OF DRAINAGE WATER IN THOSE AREAS UNDERLAIN WITH ACID FORMATIONS WITH A ph BELOW 4.0 THE FOLLOWING REQUIREMENT SHALL BE MET:

1. LIMIT THE EXCAVATION AREA AND EXPOSURE TIME WHEN HIGH ACID PRODUCING SOILS ARE ENCOUNTERED.

2. TOPSOIL STRIPPED FROM THE SITE SHALL BE STORED SEPARATELY FROM TEMPORARILY STOCKPILED HIGH ACID PRODUCING SOILS.

3. STOCKPILES OF HIGH ACID PRODUCING SOIL SHOULD BE LOCATED ON LEVEL LAND TO MINIMIZE ITS MOVEMENT, ESPECIALLY WHEN THIS MATERIAL HAS A HIGH CLAY CONTENT.

4. TEMPORARILY STOCKPILED HIGH ACID PRODUCING SOIL MATERIAL TO BE STORED MORE THAN 48 HOURS SHOULD BE COVERED WITH PROPERLY ANCHORED, HEAVY GRADE SHEETS OF POLYETHYLENE WHERE POSSIBLE. IF NOT POSSIBLE, STOCKPILES SHALL BE COVERED WITH A MINIMUM OF 3 TO 6 INCHES OF WOOD CHIPS TO MINIMIZE EROSION OF THE STOCKPILE. SILT FENCE SHALL BE INSTALLED AT THE TOE OF SLOPE TO CONTAIN MOVEMENT OF THE STOCKPILED MATERIAL. TOPSOIL SHALL NOT BE APPLIED TO THE STOCKPILES TO PREVENT TOPSOIL CONTAMINATION WITH HIGH ACID PRODUCING SOIL.

5. HIGH ACID PRODUCING SOILS WITH A pH OF 4 OR LESS, OR CONTAINING IRON SULFIDE, (INCLUDING BORROW FROM CUTS OR DREDGED SEDIMENT) SHALL BE ULTIMATELY PLACE OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS PER ACRE (OR 450 POUNDS PER 1,000 SQUARE FEET OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12 INCHES OF SETTLED SOIL WITH A pH OF 5 OR MORE EXCEPT AS FOLLOWS:

   A. AREAS WHERE TREES OR SHRUBS ARE PLANTED SHALL BE COVERED WITH A MINIMUM OF 24 INCHES OF SOIL WITH A pH OF 5 OR MORE.

   B. DISPOSAL AREAS SHALL NOT BE LOCATED WITHIN 24" OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS BERMS, STREAM BANKS, DITCHES AND OTHERS TO PREVENT POTENTIAL LATERAL LEACHING DAMAGES.

6. EQUIPMENT USED FOR MOVEMENT OF HIGH ACID-PRODUCING SOILS SHOULD BE CLEANED AT THE END OF EACH DAY TO PREVENT SPREADING OF HIGH ACID-PRODUCING SOIL MATERIALS TO OTHER PARTS OF THE SITE, INTO STREAMS OR STORMWATER CONVEYANCES, AND TO PROTECT MACHINERY FROM ACCELERATED RUSTING.

7. NON-VEGETATIVE EROSION CONTROL PRACTICES (STONE TRACKING PADS, STRATEGICALLY PLACED LIMESTONE CHECK DAM, SEDIMENT BARRIER, WOOD CHIPS) SHOULD BE INSTALLED TO LIMIT THE MOVEMENT OF HIGH ACID-PRODUCING SOILS FROM, AROUND, OR OFF THE SITE.

8. FOLLOWING BURIAL OR REMOVAL OF HIGH ACID-PRODUCING SOIL, TOPSOILING AND SEEDING OF THE SITE (SEE TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, AND TOPSOILING), MONITORING MUST CONTINUE FOR A MINIMUM OF 6 MONTHS TO ENSURE THERE IS ADEQUATE STABILIZATION AND THAT NO HIGH ACID-PRODUCING SOIL PROBLEMS EMERGE. IF PROBLEMS STILL EXIST, THE AFFECTED AREA MUST BE TREATED AS INDICATED ABOVE TO CORRECT THE PROBLEM.

STABILIZATION WITH MULCH (IF REQUIRED)

METHODS AND MATERIALS

1. SITE PREPARATION

   A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS, FOR LAND GRADING.

   B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

2. PROTECTIVE MATERIALS

   A. UN-ROTTED SMALL-GRAIN STRAW, OR SALT HAY AT 2.0 TO 2.5 TONS PER ACRE IS SPREAD UNIFORMLY AT 90 TO 115 POUNDS PER 1,000 SQUARE FEET AND ANCHORED WITH A MULCH ANCHORING TOOL, LIQUID MULCH BINDERS, OR NETTING TIE DOWN. OTHER SUITABLE MATERIALS MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT. THE APPROVED RATES ABOVE HAVE BEEN MET WHEN THE MULCH COVERS THE GROUND COMPLETELY UPON VISUAL INSPECTION, ie. THE SOIL CAN NOT BE BELOW THE MULCH.

   B. ASPHALT EMULSION IS RECOMMENDED AT THE RATE OF 600 TO 1,200 GALLONS PER ACRE. THIS IS SUITABLE FOR A LIMITED PERIOD OF TIME WHERE TRAVEL BY PEOPLE, ANIMALS OR MACHINES IS NOT A PROBLEM.

   C. SYNTHETIC OR ORGANIC SOIL STABILIZERS MAY BE USED UNDER SUITABLE CONDITIONS AND IN QUANTITIES AS RECOMMENDED BY THE MANUFACTURER.

   D. WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE (OR ACCORDING TO THE MANUFACTURER'S REQUIREMENTS) MAY BE APPLIED BY A HYDROSEEDER.

   E. MULCH NETTING, SUCH AS PAPER JUTE, EXCELSIOR, COTTON, OR PLASTIC, MAY BE USED.

   F. WOODCHIPS APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 2 INCHES MAY BE USED. WOODCHIPS WILL NOT BE USED ON AREAS WHERE FLOWING WATER COULD WHERE FLOWING WATER COULD WASH THEM INTO AN INLET AND PLUG IT.

   G. GRAVEL, CRUSHED STONE, OR SAG AT THE RATE OF 9 CUBIC YARDS PER 1,000 SQ. FT. APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 3 INCHES MAY BE USED. SIZE 2 OR 3 (ASTM-C-33) IS RECOMMENDED.

3. MULCH ANCHORING – SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA AND STEEPNESS OF SLOPES.

   A. PEG AND TWINE – DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRIS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.

   B. MULCH NETTING – STAPLE PAPER, COTTON, OR PLASTIC NETTINGS OVER MULCH. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED. NETTING IS USUALLY AVAILABLE IN ROLLS 4 FEET WIDE AND UP TO 300 FEET LONG.

   C. CRIMPER MULCH ANCHORING COULTER TOOL – A TRACTOR-DAWN IMPLEMENT ESPECIALLY DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SURFACE. THIS PRACTICE AFFORDS MAXIMUM EROSION CONTROL, BUT IS USE IS LIMITED TO THOSE SLOPES UPON WHICH THE TRACTOR CAN OPERATE SAFELY. SOIL PENETRATION SHOULD BE ABOUT 3 TO 4 INCHES. ON SLOPING LAND, THE OPERATION SHOULD BE ON THE CONTOUR.

   D. LIQUID MULCH -BINDERS

      1. APPLICATION SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.

      2. USE ONE OF THE FOLLOWING:

         a. ORGANIC AND VEGETABLE BASED BINDER – NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS THAT MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOTOXIC EFFECT OR IMPEDE GROWTH OF TURFGRASS. VEGETABLE BASED GELS SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER.

         b. SYNTHETIC BINDERS – HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION (IF REQUIRED)

1. SITE PREPARATION

   A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS, FOR LAND GRADING.

   B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.

   C. IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).

2. SEEDBED PREPARATION

   A. APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 S.F. OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE AT THE RATE AS ESTABLISHED BY SOIL TESTING. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES.

   B. WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.

   C. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RECTIFIED IN ACCORDANCE WITH THE ABOVE.

   D. SOILS HIGH IN SULFIDES OR HAVING A PH OF 4 OR LESS, SEE ACID SOIL NOTES.

3. SEEDING

   A. TEMPORARY SEEDING SHALL CONSISTING OF THE FOLLOWING SEED SELECTIONS OR APPROVED EQUAL:

   COOL SEASON GRASSES

SPRING OATS	@ 2.0#/1,000 S.F., WITH OPTIMUM SEED DEPTH OF 1.0 INCH
WINTER CEREAL RYE	@ 2.8#/1,000 S.F., WITH OPTIMUM SEED DEPTH OF 1.0 INCH

   WARM SEASON GRASSES

PEARL MILLET	@ 0.5#/1,000 S.F. WITH OPTIMUM SEED DEPTH OF 1.0 INCH

   PLEASE NOTE THAT OTHER SEED SELECTIONS CAN BE USED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.

   B. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF ¼ TO ½ INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE ¼ INCH DEEPER ON COARSE-TEXTURED SOIL.

   C. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK, OR TRAILER-MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER, AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT-FINERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. WHEN POOR SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS TOO STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVERSE OR TOO OBSTRUCTED WITH ROCKS, STUMPS, ETC.

   D. AFTER SEEDING, FIRMING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

4. MULCHING

   REFER TO THE MULCH NOTES, NOTE 4 UNDER THE PERMANENT VEGETATIVE COVER SECTION.

DUST CONTROL

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEASURES NECESSARY TO PREVENT THE BLOWING OR MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.

2. GIVEN THAT THE WORK IS DONE WITHIN A CONTAINED AREA AND THE SUBGRADE WILL BE EXPOSED FOR A SHORT PERIOD OF TIME UNTIL LINER IS INSTALLED, THE CONTRACTOR IS EXPECTED TO BE ABLE TO CONTROL DUST BY SPRINKLING WITH CLEAN WATER UNTIL THE SURFACE IS WET.

3. IF ADDITIONAL DUST CONTROL MEASURES ARE NECESSARY, THE CONTRACTOR SHALL AVOID THE USE OF SPRAY-ON ADHESIVES OR CALCIUM CHLORIDE IN FAVOR OF STABILIZATION WITH MULCH OR CRUSHED STONE.

4. THE CONTRACTOR SHALL SWEEP, COLLECT, AND DISPOSE OF ACCUMULATED DUST FROM PAVEMENT SAWCUTTING IMMEDIATELY TO PREVENT THIS MATERIAL FROM BECOMING AIRBORNE OR WATERBORNE.

FOR REVIEW PURPOSES ONLY
NOT FOR CONSTRUCTION

NO	LOC	DESCRIPTION OF REVISION	BY / DATE	APPR / DATE
B		ISSUED FOR REVIEW	RRJ 03/06/20	SPG 03/06/20
A		ISSUED FOR REVIEW	RRJ 02/21/20	SPG 02/21/20

WORK ORDER NO.

BUCKEYE PIPE LINE CO.
PORT READING TERMINAL

DRAINAGE & CONTAINMENT IMPROVEMENTS
SOIL EROSION AND SEDIMENT CONTROL NOTES
FOR THE 7945 TANK FIELD
PORT READING TERMINAL, PORT READING, NJ

DRAWN: RRJ	SCALE: NONE	DATE: 02-18-2020
APPROVED:	CHECKED: SPG	DRAWING NUMBER: 38-19085-Tank7945-C-703

REV B

STV

Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX Pittsburgh, PA Williamsport, PA

THE LOCATION OF FACILITY SUBSURFACE STRUCTURES, EQUIPMENT, UTILITIES OR PIPING MAY NOT BE SHOWN HEREON. IF SHOWN, LOCATION MUST BE CONSIDERED AS APPROXIMATE ONLY. FOLLOW REQUIRED ONE-CALL OR FACILITY PROCEDURES PRIOR TO EXCAVATING OR PROBING TO DETERMINE ACTUAL CONDITIONS.

STV PROJECT No.: 38-19085

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